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SURGERY OF THE BILIARY TRACT

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NEW ORLEANS

From time to time it is necessary to re-evaluate our viewpoint concerning surgery for biliary tract lesions. Advances in recent years have made it possible to segregate more definitely medical from surgical lesions, but this is still a weak feature as far as both surgeon and clinician are concerned, and honest judgment becomes in the final analysis the real line of decision. No advice for surgery is without its just content of philosophy, a necessary ingredient in treating the patient and not just the disease, and all advice to operate must have one basis for its validity, absolute integrity on the part of the surgeon. The indications for surgery are never purely scientific, but what is not obvious, is the fact that they are never debatable for the conclusion justifying surgery depends solely in the last analysis on what is good for the patient. It is the application of judgment in this respect which may be fallacious and debatable, influenced as it is by so many variables. Among the infinite variables there is one which is seldom acknowledged, but which is of tremendous importance. The patient may be the same and the circumstances and other condition the same, but the ability of the surgeon not only may influence the decision for or against surgery, it also may influence tremendously the type and the extent of the procedure. It is all well and good to say remove the gallbladder when it is acutely inflamed but this may be technically very difficult and it is not necessarily a uniform rule or the best procedure in the hands of all surgeons, for what may be safe for one may result in tragedy, an injured common duct, in the hands of another. The implication is not that the latter should not operate but that he should modify the procedure to conform to the stage of his technical perfection and experience. Ultimately the latter may become better than the prior surgeon but no general rule can be made as to what is the best thing to do. It is a justified conclusion that indications for operations exist not only in patients but also in the surgeons because of variations in abilities even in the same man at different stages. Let not the atmosphere of science dissipate the truth that when a serious operation is contemplated, particularly if it is of tremendous importance, there are many able surgeons but credit for the part technical aspects play in their make-up has been de-emphasized by the march of scientific improvements and the justified emphasis placed upon it. A surgeon is still a surgeon and his most important job is surgery.

Let us turn to a consideration of some of the changing aspects in the more common surgical lesions of the biliary system. The ones which I choose to comment upon

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are the ones which more frequently come to our attention and the comments are made particularly because they seem to me to be more interesting features of modern changes.

CHOLELITHIASIS

Gallstone is the most common lesion of the biliary tract requiring surgery and it is a very, very common disease. The first point about which I wish to comment is the question:—"Should gallstones be removed simply because they have been discovered?" The answer is no. They should be removed if their removal is better for the patient and there are numerous influences which are brought to bear on making the decision in any given case. Actually I feel that a patient, who is young and has gallstones and never has had symptoms, should have them out. The procedure of removing the gallbladder from such a patient by capable hands is a negligible risk far overbalanced by the threat of illness resulting from recurrent attacks in the future or some complication which might increase the risk. In older people also the quiet gallstone proposes a problem in conscientious judgment. The older patient with gallstone colics has a very serious illness and repeated attacks drag them down. If one waits and procrastinates until sugery just has to be done to prolong life or restore health, it is often done at tremendously increased risks. Therefore, if there is no contraindication, I feel that when such a person has some symptoms, even though not of a major type, she should be advised to have the gallbladder removed but no importuning pressure or forceful threatening argument should be given them in order to make them accept this. For then the insistence may make the advice more fortuitous for the surgeon than it is for the patient. The patient has a perfect right to choose without the harrowing, threatening insistence of, among other things, "the question of malignancy" being brought up just to get them to accept surgery. It is perfectly obvious that patients with recurrent gallstone attacks should have their gallbladder removed. They are running more risk with it than they are with operation under normal circumstances. The way for them to get rid of the disease is by surgery and few would debate the justifiable application of it in these instances.

I would like to make brief comment about certain features of the technical procedure which seem important and are insufficiently emphasized. Immediately after a surgeon opens the abdomen for a biliary tract lesion he should turn his attention not to the gallbladder or common duct but to the evaluation of other features in the abdomen which may or may not have a bearing on the symptoms. If he makes a policy of doing this first and with a definite routine he will not forget it, for such evidence may be of inestimable value in forestalling postcholecystectomy syndrome or properly evaluating it should it develop. It is a good plan to begin in the left upper quadrant, feel the spleen, then check the esophageal hiatus for hernia, then examine the stomach by palpation and as far as possible by visible means. Then he should feel the entire pancreas and compare the consistency of the tail and body and head, note carefully its size, then carefully examine the liver, feel the superior surface for tumor or abscess, look at the liver, then by palpation the kidneys and retroperitoneal areas and unless there is a very acute process check the pelvis. Finally after all of this, attention is turned to the gallbladder and common duct. Such a careful routine will obviate overlooking something which could be contributing to the symptoms.

There may be time for comment about the one single feature in performing cholecystectomy. It is the most important maneuver of all and in principle it means seeing and knowing where you are. The common duct must be visualized above and below the entrance of the cystic duct and these three limbs must be clearly identified before any clamps are applied. In order to accomplish this it is necessary to carefully cut the peritoneum on either side of the ampulla of the gallbladder and the cystic duct and down over the common

duct. The peritoneum is then pushed aside just as in liberating the bladder from the lower uterine and cervical segments. Then after carefully pushing back loose areolar tissue the ducts come into view. Unless such clear anatomic disclosure is accomplished the gallbladder should not be removed.

CHOLEDOCHOLITHIASIS

Stones in the common duct become an additional problem. The common duct was explored in 26 per cent of a series of 312 private cases operated upon for benign lesions of the biliary tract. Common duct stones were found in 36 per cent of those in whom the common duct was explored and in 10 per cent of the patients. Eighty per cent of the patients with stones in the common duct are jaundiced and 20 per cent are not. In the group of patients who have obstructive jaundice, 40 per cent of them will have no stones. There are other benign causes for obstructive jaundice, among which the most common are pancreatitis and stenosis of the papilla of Vater. These lesions must be considered, i.e., thought about at the time surgery is being performed for common duct obstruction. In this way only will their presence be detected, and proper measure to obviate them be undertaken.

The indications we use for opening the common duct are approximately those which appear in the literature, but there is considerable variation in the percentage of the common ducts explored from that reported by some surgeons. We explored the common duct in approximately 26 per cent and stones were found in 36 per cent of these with evidence of obstruction of an additional type such as ampulla stenosis in an additional 23 per cent. Approximately 40 per cent of duct explorations yielded negative findings.

The indications which influence us to open the duct are as follows:

1. The enlargement or dilatation of the common duct.
2. Thickening of the common duct when it cannot be explained on the basis of edema of the gastrophrenic omentum due to acute cholecystitis.
3. Enlargement and/or increased consistency of the pancreas indicating chronic or recurrent pancreatitis.
4. Jaundice or a history of previous jaundice.
5. Palpable stones in the duct.

We do not include in these indications the presence of small stones in the gallbladder. That certainly would raise the number of ducts we explore up to a very high level because the incidence of at least some very small stones in all gallbladders containing stones is relatively high.

PANCREATITIS

Pancreatitis is probably a very much more common disease than we formerly realized. Since this discourse is not particularly concerned with it, no discussion of its types is given. It is possible of course to diagnose severe pancreatitis with a certain degree of accuracy preoperatively, but the increasing incidence of pancreatitis is occasioned by finding evidences of pancreatitis at operation. The pancreas should be palpated carefully in all biliary tract operations. In operations for benign lesions of the biliary tract we have found an enlarged hard pancreas in 4.6 per cent. Such evidence is more often disclosed when there is history of radiation of pain through to the back on the left. Fat necrosis need not be present for sufficient justification, for the diagnosis of pancreatitis at operation is simply enlargement and hardness of the pancreas.

When evidences of pancreatitis are found at surgery an attempt is made to do something about it. The obstruction or potential obstruction at the ampulla of Vater is relieved by transduodenal ampullotomy. A high percentage of pancreatitis of the chronic or the acute type is caused by partial obstruction. For that reason I take a very aggressive attitude toward the relief of it. The common duct is explored and intubated. If it is not of the fulminating acute variety, a transduodenal ampullotomy under direct vision is performed and a T-tube is placed transvaterianally into the duodenum. Excellent results have been obtained as evaluated

by follow-up of patients (14)treated in this aggressive fashion. If the patient has an acute hemorrhagic type of pancreatitis, I feel it is still advisable to decompress the biliary tract, but when there is such massive edema the duodenum is not opened, a tube may be placed into the gallbladder which decompresses the biliary tract, or else if it can be revealed without too much dissection, a T-tube is placed in the common duct.

Transduodenal choledochoampullotomy should not be undertaken lightly. It is a potentially dangerous procedure though we have been able to accomplish it 42 times in our series and without a fatality. In 81 common duct explorations the supraduodenal was the only method used in 39 and the combined supraduodenal and transduodenal in 42. There were two deaths, both among the supraduodenal explorations. I am convinced surgeons will resort, in the future, more frequently to the combined supraduodenal and transduodenal approach when there is any doubt about the passage of the sound through the papilla.

STRICTURE OF THE COMMON BILE DUCT

Stricture of the common bile duct is either congenital or acquired. Most of the congenital types are intrahepatic and relief of it surgically is difficult or impossible. Extrahepatic congenital stricture may be treated surgically with brilliant results, but it is rare. The majority of benign strictures of the common bile duct are acquired; and unfortunately much to the discredit of the profession, always, they are man made. It is naive for a man to think that the patient upon whom he operated for an acute gallbladder and who subsequently developed stricture of the common bile duct, did so because inflammation in that region resulted in damage to the duct. The truth of the matter is the stricture resulted from his cutting out part of the common duct. We must realize these things and acknowledge them and then we will become better. Any bizarre type of explanation for stricture of the common duct other than the horrible truth is not acceptable. Because these strictures are man made they are the result of poor technique. A surgeon must always know where he is when operating on the biliary tract, and he must see it and see it without question before he makes a destructive move with a clamp or a knife or scissors. If he does not lose his equanimity, which may be defined as a quietness of spirit, the basis of which is integrity, he should stop and reflect and decide to do less than he had hoped to accomplish if this less is the better path. Certainly he should not remove the gallbladder unless the ducts are visible and well defined.

In the repair of strictures it is important to get beautiful exposure, to get the lesion right up in the hands and before one's eyes. They are notably difficult operations and the little experience I have had with them makes me believe that the thoraco-abdominal incision which brings the lesion closer and more in the open is the best one unless the stricture is very low in the common bile duct. A Roux-Y type of construction bringing a loop of jejunum up and anastomosing the proximal stump of the common duct to it such as Warren Cole advises, is probably the best technical procedure in most instances, although of course if the duct itself can be reconstructed after excision of the stricture, that is more advisable.

MALIGNANT LESIONS

Malignant lesions causing obstruction of the biliary tract are now amenable to surgery. Carcinoma of the ampulla of Vater carries a reasonable hope of five years' survival after pancreatectomy and for that reason it is not debatable that this operation should be performed. The risk is considerable for pancreatectomy but it can be accomplished with less risk than is incurred by a neglected carcinoma of the ampulla of Vater. Less aggressive surgery such as by-pass operations are not justified as an alternative. Carcinoma of the pancreas, on the other hand, which causes a similar type of obstruction has been a very discouraging and disappointing surgical lesion. The operation of pancreatectomy is a big one. Many of the cases are inoperable because of extension

at the time they are explored and those which are presumably confined to the pancreas have a high rate of recurrence after pancreatectomy. In my own limited experience of 11 pancreatectomies for malignancy only one patient had a survival time of as long as two and one-half years. The rest of them died of recurrences within a briefer period or from the operation. Therefore, many able men have begun to feel that the aggregate survival of patients after pancreatectomy for carcinoma, even granting that 1 in 100 is cured, is less than the average survival time of a similar group of patients if no surgery is performed. This unhappy viewpoint is to a certain extent justified at the present time, but I personally think that resection of the pancreas should be done for the carcinoma, if the appearance at surgery is that extension has not occurred beyond that organ. In my experience also the operation of pancreatectomy is one of the most formidable in the realm of surgery. It is hard and it takes a long time, and I have found it far more technically difficult than pneumonectomy for example or gastrectomy or even an esophagogastrectomy or even excision of the abdominal aorta and graft. All of these major type procedures in my experience can be done in shorter time than pancreatectomy.

CARCINOMA OF THE LIVER

Carcinoma of the liver, if it is unilateral and primary, is amenable to surgery. Hemihepatectomy may be accomplished to eradicate it. There is increasing evidence that carcinoma of the liver begins in cirrhotics and in multiple places but unless it is obviously a bilateral disease the surgeon can remove one lobe, left or right, and can possibly obviate the otherwise fatal illness. A different attitude, however, maintains as far as I am personally concerned with regard to hepatic metastasis even though they are single ones. As a surgeon, I hate mutilating operations, those that prolong the patient's life or just the upper half of his body with no possible hope of cure or health so that he suffers more with the inevitable dragged out into a lingering illness. There comes a time when patients should be permitted the mercy of death, though I am not intimating that it must be made for them. Resection of the liver for metastatic malignancy, even though one nodule is found, as far as I am concerned, belongs in the category of mutilating operations. This type of surgery cannot possibly help people. Suppose it does prolong their life some months and suppose the surgeon has done some big technical procedures and had another operation, from my own personal viewpoint and philosophy it is not for the best interest of the patient.

SUMMARY

Biliary tract surgery is making progress. It is being done with increasing frequency. People continue to have gallstones and until some means is found to prevent them on a biologic basis or some means such as sound waves is found to fracture and dissipate them and prevent their recurrence, surgery will be a beneficent method of management in these patients.

Other benign lesions justify surgery of the biliary tract and can produce brilliant results. I believe pancreatitis will be found among these in increasing frequency. Brief experience has shown it to be amenable to aggressive action, more so than to indirect or conservative measures.

Malignancy necessitates surgery of the biliary tract, and operations for it though formidable may offer a real chance for restored health.

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CARDIAC SURGERY IN A COMMUNITY HOSPITAL; A REPORT OF 14 CASES *

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There has been remarkable progress made in the field of cardiovascular surgery during the past several years. While many of the acquired and congenital diseases of the heart are still wanting for

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successful, practical surgical treatment, they are being attacked with promise in the research laboratory and in isolated clinical studies. Several of the acquired and congenital defects have already been successfully treated in great numbers by standardized, proven surgical procedures. Among the latter, the patent ductus, tetralogy of Fallot, coarctation of the aorta, pulmonary valvular stenosis, mitral stenosis, constrictive pericarditis, and aneurysmal and occlusive disease of the aorta have all met with gratifying results.

With the clarification of diagnostic criteria, the increasing number of comprehensively trained thoracic surgeons, and the improvement in hospital facilities to meet this challenge, cardiac surgery can now be successfully executed in many community hospitals on the periphery of the, "medical center". There must, of course, be available competent medical and pediatric consultation. Expert anesthesia is a requisite. Trained nursing and first rate clinical, laboratory, and radiological facilities are essential. One must, of course, have the basic physical equipment to carry out the needed diagnostic and surgical procedures. All of the foregoing are richly available in Baton Rouge in both of its hospitals, Our Lady of the Lake Sanatorium and the Baton Rouge General Hospital.

The purpose of this report is to outline my experience with 14 consecutive cardiovascular surgical cases performed during the period November 19, 1953, through March 5, 1955. No attempt will be made to document the details of diagnosis, surgical selection or surgical technique, all of which have been adequately covered in the literature within recent years.

The first elective cardiac surgical procedure in Baton Rouge was performed on November 19, 1953. The cases were about equally divided between the two hospitals. Three cases had preoperative cardiac catheterization performed at the Heart Station of Charity Hospital, New Orleans, Louisiana.

Though the series is small, a wide variety of congenital lesions are represented. There was one postoperative death, in the mitral stenosis group. All of the remaining patients are living and well at the time of writing.

MITRAL STENOSIS

There have been six mitral commissurotomies. (Table 1) The technique and approach has been that standardized by Harken and Bailey, designed to split or cut the fused valve commissures so as to approximate normal valvular function. In one case, because of an atretic, fibrotic appendage, it was necessary to approach the valve through the atrial wall. Anesthesia was expertly administered in each case, with the patient awake on return from the operating room.

The one death was in a 28 year old female, severely disabled from mitral stenosis and intractable right sided failure. There was no history of previous embolic accident. She was fibrillating at the time of surgery. A tight stenosis was found and what was felt to be an excellent fracture obtained. On return from the operating room, though fully reacted, she was seen to have right sided weakness.

TABLE 1
MITRAL STENOSIS GROUP

Patient	Age	Preoperative Classification	Finding at Surgery	Complication	Postoperative Improvement
R. H. (f)	56	M. S. IV	Tight stenosis	O	Excellent
D. B. (f)	41	M. S. IV	Tight stenosis	Pneumonitis R. L. L.	Excellent
R. S. (m)	28	M. S. III	Mitral stenosis & insufficiency	O	Good
G. S. (f)	28	M. S. IV	Tight stenosis	Left middle cerebral embolus	Died 4 days P.O.
M. C. (m)	47	M. S. & M. I. IV	Mitral stenosis & insufficiency	O	Fair
V. P. (m)	27	M. S. IV	Tight stenosis	O	Good

Within a few hours, she showed complete right hemiplegia and aphasia and over the ensuing seventy-two hours became less reactive, with a temperature rise to 104 degrees. She expired on the fourth postoperative day. It was of interest that her rhythm reverted to normal following surgery and she at all times seemed to demonstrate improved cardiac function.

Patients have been classified preoperatively as to their surgical risk and morbidity status by the grouping I through IV advocated by Ellis and Harken, and widely accepted.

Selection for surgery was difficult in 2 cases in which a systolic apical murmur was heard in the presence of otherwise classical signs and symptoms of stenosis. Both of these cases were in the group IV salvage category, and at surgery were found to have associated insufficiency, but with a stenotic element as well. Both of these patients survived surgery and seem to show moderate improvement thus far. The 3 patients who had pure stenosis are remarkably rehabilitated, and all 3 were advanced group IV cases. Three of the 6 patients had had preoperative embolic accidents. Case V. P. had two severe embolic episodes two years earlier as well as subacute endocarditis. His valve was found to be markedly calcified, and was the only case which required instrumental valvotomy (Brock valvulotome). The striking evidence is that advanced cases such as these, in a generally above average age group, can be taken through surgery with a reasonable mortality risk, much reduced over the experience of a few years ago.

CONGENITAL GROUP

There were 8 cases of congenital heart disease in the operated group (Table 2). It is interesting to note that with the exception of the 2 cases of tetralogy of Fallot and 1 ductus case, the remaining 5 were told at earlier ages that they had, "heart trouble". However, it was not until shortly before surgery that a definitive diagnosis was made. Three of the cases, the two tetralogies and the case of pulmonic stenosis had preoperative cardiac catheterization at the Heart Station of Charity Hospital, New Orleans. The diagnosis of each of these was made, however, on the basis of fairly classical clinical and fluoroscopic evidence.

TETRALOGY OF FALLOT

Both cases had the classical auscultatory findings, the ischemic lung fields, and the typical *coeur en sabot*. Catheterization studies suggested an infundibular type of pulmonic stenosis in each case. Both had left sided aortas. The surgical approach in both cases was through the left side.

Case W. D. was the most severe, with intense cyanosis and marked exertional dyspnea. She had never been able to attend school and exhibited marked clubbing and polycythemia. She has had a

TABLE 2
CONGENITAL GROUP

Patient		Age	Defect	Operation	Complication	Result
W. D.	(f)	9	Tetralogy of Fallot	L. pulm. artery subclavian anastomosis (1-22-54)	O	Good
B. C.	(f)	9	Tetralogy of Fallot	L. pulm. artery subclavian anastomosis (8-21-54)	P. O. Cerebral Anoxia	Fair
P. S.	(m)	10	Patent Ductus	Triple ligation (11-19-53)	O	Good
L. B.	(f)	19	Patent Ductus	Division (12-20-54)	Transient Lt. Recurrent Palsy	Good
T. F.	(m)	32	Pulmonary Valvular Stenosis	Pulmonary valvotomy (6-10-54)	P. O. Bleeding	Good
S. A.	(f)	18	Coarctation	Resection with anastomosis (8-25-54)	O	Good
P. T.	(m)	24	Coarctation	Resection with anastomosis (10-22-54)	Transient Lt. Leg Weakness	Good
J. L.	(m)	24	Coarctation	Resection with insertion of homograft (2-6-55)	O	Good

remarkable clinical improvement from a left subclavian pulmonary artery anastomosis. She is now at school and able to partake of almost unlimited activity. She is no longer cyanotic and there has been some regression of the clubbing.

Case B. C. was quite cyanotic but able to attend school, though unable to tolerate exercise. On the second postoperative day, after a satisfactory anastomosis and immediate recovery, while being transferred from nasal oxygen to an oxygen tent, she had a convulsion, lost consciousness, and exhibited a bilateral flaccid paralysis. She slowly recovered over a period of two weeks, but with residual leg weakness which has only recently returned to normal. It is felt that she suffered cerebral anoxemia during the immediate postoperative handling. Her cyanosis is today almost gone, except on exercise. Her overall result has not been as dramatic as the first case, but she is able to ride a bicycle and has a much improved exercise tolerance.

PATENT DUCTUS

In the ductus group, patient P. S. had a long ductus and was ligated after the technique described by Blalock, using two transfixion sutures at each end. He was asymptomatic before surgery and has done very well, with some diminution in the size of his heart on x-ray comparison.

Case L. B. is a college student who had just recently begun to note tachycardia and mild exertional dyspnea. She had had a continuous murmur in the second left interspace noted since birth, but a diagnosis of patent ductus had not been made until her initial physical examination on entrance to Louisiana State University. At surgery, she had a large, short, sclerotic ductus which was extremely friable and required mobilization of the aortic arch and temporary clamping of the aorta to close the divided ductus. Her aorta was occluded for twenty-two minutes with no untoward sequelae. She did demonstrate a transient left recurrent nerve palsy from inadvertent trauma to the left recurrent laryngeal nerve which wound about the ductus. She has shown an excellent clinical response thus far.

Neither of these 2 cases demonstrated any evidence that might have suggested pulmonary hypertension and some reversibility of flow within the ductus. Preoperative cardiac catheterization was therefore felt to be not necessary. Where there is evidence of possible reversibility of flow as evidenced by right axis deviation on electrocardiographic or right ventricular enlargement, or peripheral cyanosis on exertion, the ductus should then be considered to be not uncomplicated and catheterization studies considered.

PULMONARY VALVULAR STENOSIS

The one case of pulmonary valvular stenosis was in a 32 year old male who had noted progressive exertional dyspnea for several years. The parents were told when he was a child that he had a, "leaky heart". He presented the classical pulmonic, blowing, systolic murmur and thrill with an enormous pulmonary artery and right ventricular hypertrophy. Catheterization studies revealed what appeared to be a patent foramen ovale, but without any significant shunt. The pressure in the right ventricle was 100 mms. Hg. with an abrupt drop when the catheter tip entered the pulmonary artery.

At surgery, he presented the classical picture of congenital valvular stenosis. The valve was digitally palpated and had a lumen of about 5 mms., which could be stretched to allow the index finger to

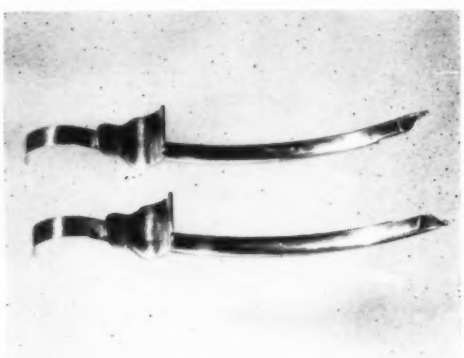

Figure 1. The paired Nichols pulmonary valvulotomes used to incise the conelike fused cusps of pure valvular stenosis.

pass. The fused valve was incised on each lateral edge with a Nichols-Bailey valvulotome, which gave an excellent result. These instruments readily transform the stenotic valve to a bicuspid type valve structure. His postoperative course was complicated by chest wall oozing. It was later learned that he had had difficulty in clotting blood following a tonsillectomy during his early childhood. His preoperative bleeding and clotting time were normal, however. He received two units of fibrinogen, and was re-operated the same day to remove blood clot from the left pleural space. His recovery from that point on was very satisfactory and he has shown progressive improvement in his exercise tolerance since operation. On x-ray comparison there appears to be some diminution in the size of his right ventricle at this time, but he still presents an enormous pulmonary artery on the PA view.

In the adult patient, the operator's index finger can easily and safely be inserted through an incision in the hypertrophied right ventricular wall and the valve palpated and the stenotic orifice actually stretched by the index finger. It is the author's opinion that the Nichols-Bailey valvulotome produces a much more adequate valvular incision than that obtained with the Brock blades. Following valve incision there was a marked change and diminution in the intensity of the murmur, and he postoperatively presents no evidence of a thrill.

COARCTATION OF THE AORTA

It is generally agreed that surgery for coarctation of the aorta should if possible be undertaken around age 8 through 12. At this time, the aorta is usually elastic, pliable, and excision and primary anastomosis can be carried out in almost all instances. The 3 cases in this series were all in adults, who had the diagnosis made just a short time before actual surgery. Their clinical picture was classical for coarctation of the aorta in each case. (Table 3) All three demonstrated rib notching and absent femoral pulsations.

Case S. A. was discovered during an admission to the hospital for threatened abortion during the first trimester. The diagnosis was made for the first time by her attending obstetrician. She lost her pregnancy at that time and underwent surgery for her coarctation six months later. At operation she presented the classical coarctation with complete obstruction, about 1 cm. below the take-off of the left subclavian artery. Her aorta was easily mobilized and an excision and primary anastomosis was possible.

In the other 2 cases, a preserved aortic homograft was made available for surgery. The graft in each case was obtained locally by the author under sterile technique from a suitable young donor within six hours after death. The graft was preserved in modified Tyrode's solution which contained 100,000 units of penicillin and 1 gram of streptomycin. There was no bacterial contamination during the short period that the grafts were preserved prior to surgery. In the case of P. T., though a graft was available, it was possible to mobilize the aorta sufficiently to effect a primary anastomosis. In the latter case, there were several large aneurys-

TABLE 3
COARCTATION OF AORTA

Patient	Age	Brachial Pressure		Symptoms	Preop. Femoral Pulse	Rib Notching
		Preop.	Postop.			
S. A. (f)	18	190/110	115/80	Headaches, leg weakness	Absent	Present
P. T. (m)	24	190/115	140/90	Numbness and weakness legs. Exertional headache	Absent	Present
J. L. (m)	24	210/110	130/90	Numbness legs. Headache	Absent	Present

mal intercostal arteries entering the aorta just below the coarcted segment. It was necessary to occlude these vessels during the resection and anastomosis. Following surgery, the patient exhibited weakness in his left leg. He required a walking stick for about four weeks, but has now returned to full use of his legs with no residual weakness.

Case J. L. had a known heart murmur since birth, but a diagnosis of coarctation of the aorta was not made until shortly before surgery, despite progressive hypertension over the previous six years. He had spent three years in the service and was discharged without the diagnosis having been made. He was told at that time that his murmur was functional and it was felt that his pressure elevation was not significant. The year prior to surgery, his pressure increased progressively and he began to have severe headaches and leg weakness. Diagnosis was made by his family physician during an examination for insurance. At surgery, he was found to have a rather long coarcted segment

Figure 2. The three reported resected segments of aortic coarctation, showing the variation in length and configuration.

measuring almost 3 centimeters, but in the classical location just below the left subclavian take-off. After resecting the coarcted segment to a degree sufficient to give him a reasonably normal aortic lumen, it was found that the aorta could not be mobilized sufficiently to effect the primary anastomosis. A 5 cm. preserved aortic homograft was inserted, using interrupted everting suture technique. The patient had a completely uneventful postoperative recovery and now has palpable femoral pulsations and a pressure in both arms of 135/90.

It is of interest that the first patient operated upon in this series, Case S. A. is now in her fourth month of pregnancy with no untoward symptoms and a persistent normal brachial pressure.

SUMMARY

The surgical treatment of many acquired and congenital diseases of the heart has within recent years been placed on a sound, safe and practicable basis. This has been the logical sequence of the remarkable refinements in diagnosis and thoracic surgical technique that have been established by the pioneers in this field.

As a result, many of these cardiac lesions have become standardized both as to diagnostic separation and surgical technique. In most cases, the diagnosis can be made on the basis of physical examination, history, fluoroscopy and EKG. Cardiac catheterization and angiocardiography may be required in the complicated cases.

The close cooperation of internist, pediatrician, thoracic surgeon, and anesthetist is vitally important. The environment of a well equipped hospital and the services of an expert radiologist and pathologist are understandably necessary. When the latter are available, cardiac surgery can be safely and successfully executed on the periphery of the "medical center".

Fourteen consecutive elective cardiac surgical procedures have been reported. These have been performed in Baton Rouge, Louisiana since November 1953. There has been one postoperative death. The remaining patients are well and improved.

DISCUSSION

Dr. Louis Levy, II. (New Orleans): I wish to congratulate Dr. Beskin on his fine presentation and the excellent results he has obtained in this most difficult type of surgery. His success with cardiac surgery in Baton Rouge attests to the excellent preoperative, operative, and postoperative facilities available in that locality.

Although the capability and experience of the

surgeon are the factors of primary importance in the success of this type of surgery, it cannot be re-emphasized too strongly that other requirements must be fulfilled in order that satisfactory surgical results with the lowest possible morbidity and mortality be obtained. These factors are: (1) proper diagnoses, (2) proper experienced anesthetic care, and (3) close postoperative attention by all medical personnel including anesthetists, surgeon, pediatrician, and internist, and by the nursing personnel, with particular attention being focused on the early signs of complications.

If the above requirements are met, then this type of surgery can be performed in any locality with results comparable to those obtained in the so-called big medical centers. The degree to which any of the above requirements are not fulfilled will, in large part, determine the morbidity and mortality rate. Even the most experienced and capable surgeon cannot compensate for a wrong preoperative diagnosis or an unnoticed postoperative atelectasis, pneumonitis, congestive failure, etc. The surgeon's task is certainly facilitated by a smooth anesthetic course, and his problems are multiplied manifoldly by a stormy anesthetic course.

The success which Dr. Beskin has had in attacking this difficult type of surgery should again be commended and reflects well on the fulfillment of the factors mentioned above.

I believe it would be in order to say a few words regarding the employment of procedures, such as cardiac catheterization, angiocardiography, arterial oxygen saturation studies, and dye dilution techniques.

Acquired cardiovascular disease amenable to surgery includes constrictive pericarditis, cardiac trauma, mitral stenosis, certain aortic valvular lesions, peripheral vascular aneurysmal and thrombotic lesions, and operations to improve coronary blood flow. Only occasionally are the procedures mentioned above of more than academic interest in acquired heart disease. An exception is the use of angiocardiography in aneurysmal and thrombotic disease of the aorta. The types of congenital heart disease in which considerable surgical experience has been obtained include coarctation of the aorta, patent ductus arteriosus, tetralogy of Fallot, pulmonary stenosis, and interatrial septal defect.

Patent ductus and coarctation of the aorta usually can be diagnosed clincially without use of complicated laboratory procedures. Occasionally, in an infant, cardiac catheterization is necessary to establish the diagnosis of patent ductus. A graft should always be available when patients with coarctations are being subjected to surgery. In the other three types of congenital heart disease, tetralogy of Fallot, pulmonary stenosis, and interatrial septal defect, cardiac catheterization should be performed prior to surgery, unless the infant's status is such that cardiac catheterization would increase the surgical risk. Of course, there is no reason why surgery cannot be performed in a locality removed from that where the diagnostic procedures are done. In fact, if an experienced capable surgeon and proper anesthesia and postoperative facilities are available, in most instances, this would be preferable, both from the patient's and the medical standpoint.

It seems to me that cardiac surgery should be relegated to those surgeons who have had adequate training and experience in this field, and should not be attempted by those who plan to attack the problem of cardiac surgery only occasionally or rarely. Only in this way will satisfactory results be obtained.

It is obvious from Dr. Beskin's excellent results that Baton Rouge represents a locality where all requirements for satisfactory cardiac surgery have been fulfilled.

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OBSERVATIONS ON ATRIAL SEPTAL DEFECT *

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NEW ORLEANS

In the Heart Station at Charity Hospital, during the past eight years, the diagnosis of atrial septal defect has been established by cardiac catheterization in 41 patients. Upon review of the clinical and hemodynamic findings in these cases several interesting observations were made. There was much in the hemodynamic data that was not predictable from clinical examination. This report deals with some of these observations.

Ages ranged from 4 months to 59 years. Twenty-nine were over 10 years of age. Thirty-six were females. Of the entire group of 41 patients studied, 12 were physically fit, or practically free of symptoms. All of these 12 were less than 30 years of age, and 5 were less than 10 years of age. One patient had been a boxer until age 30 years, and did not develop symptoms until the age of 52 years. Nine of the 41 patients, however, were severely incapacitated. This incapacity was usually associ-

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, May 4, 1955, in New Orleans.

† From the Department of Medicine of the Louisiana State University School of Medicine and the Heart Station of Charity Hospital at New Orleans.

ated with severe dyspnea and weakness, rarely with peripheral edema or ascites.

Gestation and delivery were remarkably easy in 9 of the 12 women who became pregnant. Their course was uneventful and labor was not prolonged or difficult. Most of these patients had several children. No cesarian sections were done. Three of the patients were severe cardiacs with cyanosis and arterial unsaturation. The course of pregnancy was extremely difficult in these 3, and 1 died at the time of delivery.

CRITERIA FOR DIAGNOSIS

The murmur usually associated with atrial septal defect is a loud blowing high pitched systolic, heard best at the second or third left lateral sternal edge. There is, however, a great variation from patient to patient. It may be heard as high as the aortic area or as low as the tricuspid area. We have not encountered a patient without a murmur. In about one-third of the cases, the murmur of mitral stenosis is encountered additionally, and this has been referred to as Lutembacher syndrome. About half of the cases had a high pitched blowing diastolic murmur heard best at the pulmonic area.

Fluoroscopic examination revealed several important findings; Pulmonary vessels were large and pulsated well. Pulmonary conus was prominent. Right atrium and right ventricle were large. The left atrium and aorta were small. The left ventricle was normal but often gave a false appearance of enlargement due to posterior displacement by the enlarged right ventricle. Barium esophagram was not displaced by the left atrium.

The electrocardiogram is most helpful in establishing the diagnosis of atrial septal defect. All of our patients had either a right bundle branch block or delay, or right ventricular hypertrophy, or a combination of delay and hypertrophy. At early ages, when the R wave is normally large in V-1 and the S wave present in V-6, the ECG may be less helpful. Pragmatically, if the ECG is normal, the diagnosis is in question.

Cardiac catherization is the best clinical method of establishing the diagnosis. As the catheter is passed from the superior vena cava into the right atrium, a rise in oxygen content of the blood removed is encountered. Frequently, the catheter is actually passed through the defect to the left atrium. A careful search is made for anomalous pulmonary veins that may enter into the right atrium, and give identical oxygen data. An atrial septal defect is frequently associated with these anomalous pulmonary veins.

CORRELATION OF DATA

Correlation of the hemodynamic data obtained from catheterization with the clinical findings was surprisingly poor. There was an apparent correlation of the height of the right heart pressure with the severity of the symptoms (Fig. 1). In general, those with the highest pressures had the greatest disability. However, two of the severely incapacitated patients had rather low pressures.

There were several interesting data that failed to show any correlation with clinical and x-ray studies. The size of the

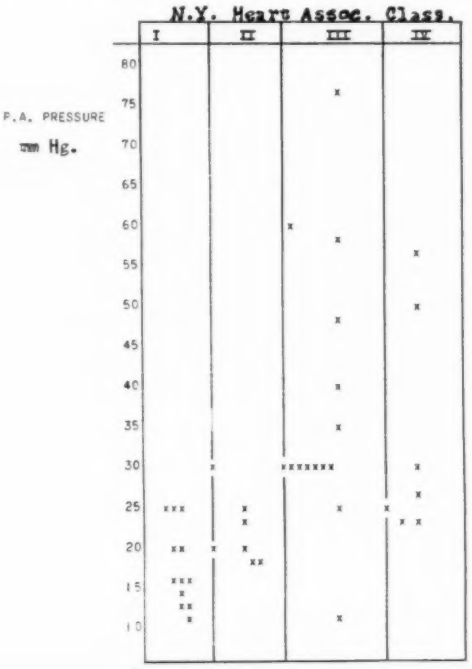

Figure 1. Symptoms.

heart bore no relationship to the pressure within its chambers. Frequently, those with the largest hearts had the lowest pressure. Inspection of the chart revealed the lack of relationship between the two (Fig. 2).

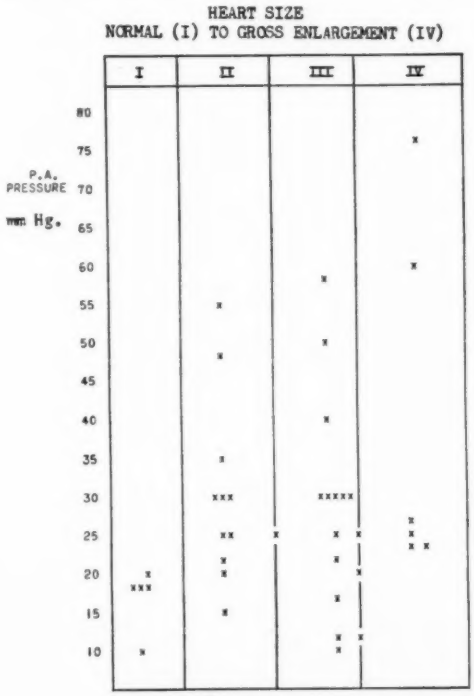

Figure 2

The size of the interatrial left to right shunt bore no relationship to the heart size. Some of the smaller hearts had the largest shunts (Fig. 3). It might have been thought that the larger heart in Figure 3 would have had the larger shunt. Catheterization studies indicated the opposite to be the case. The pulmonary vessels were usually large and pulsated vigorously. Two patients were considered to have aneurysms of the pulmonary vessels. However, the size of the pulmonary artery gave no clue as to the pressure in that vessel (Fig. 4). The Graham-Steele murmur has been attributed to pulmonary hypertension with subsequent dilatation of the pulmonary valve ring. We have frequently encountered the pulmonary diastolic murmur of Graham-Steele, but could find no relationship to the pressure in the pulmonary artery. There was equally no correlation with the quantity of blood flowing through the pulmonary artery (Fig. 5).

Engorgement of the pulmonary vessels

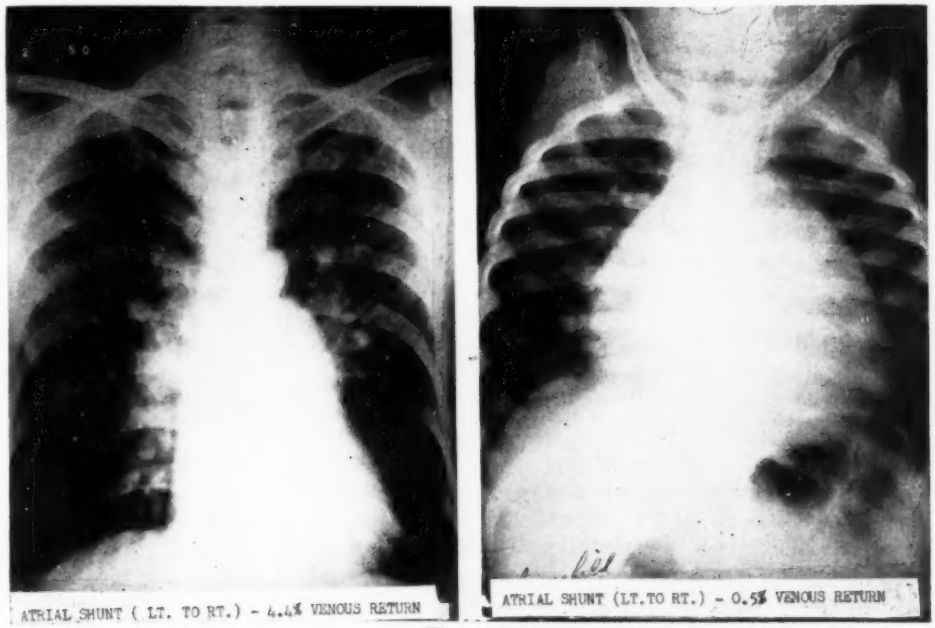

Figure 3

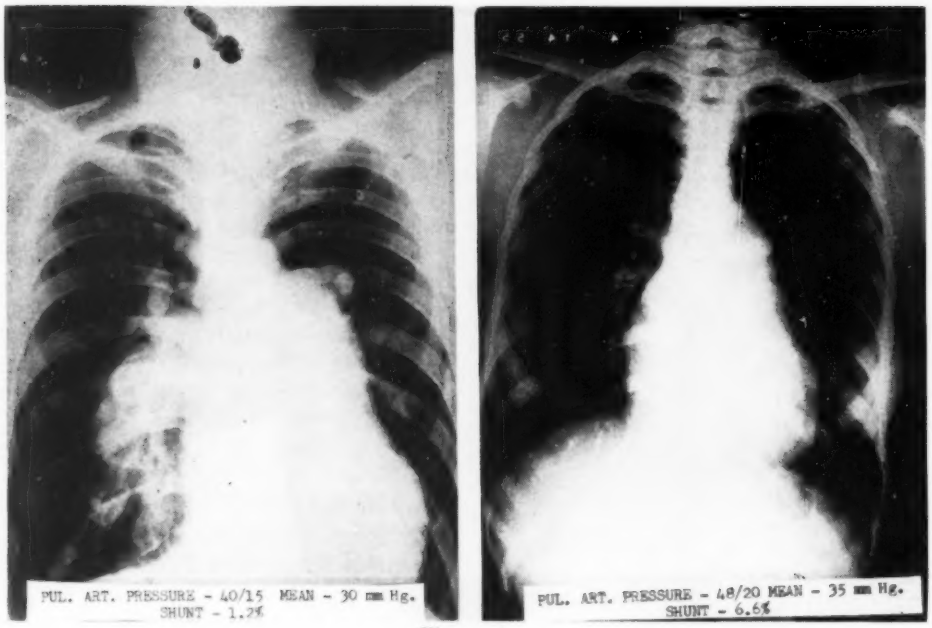

Figure 4.

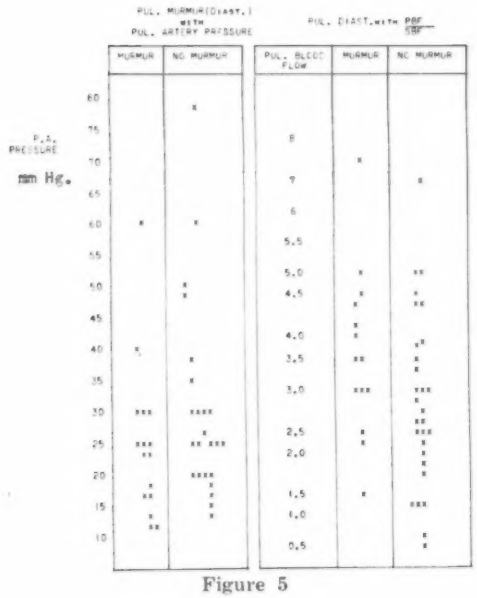

Figure 5

on x-ray is generally attributed to increased flow through these vessels. In most cases, there was a much greater pulmonary blood flow than systemic blood flow. Albeit, we could not predict relative pulmonary blood flow by x-ray studies. Actually, one of those with the severest engorgement of the lungs had hardly more pulmonary blood flow than the severely reduced systemic blood flow. (Fig 6).

The murmur of mitral stenosis was not infrequently heard in these patients. In most, we were able actually to measure the pressure in the left atrium. These with the murmur of mitral stenosis had no higher left atrial pressure than those without this murmur. Indeed, many patients with this murmur had a normal left atrial pressure (Fig. 7).

PATHOGENESIS OF CYANOSIS

By measuring the arterial oxygen saturation while the patient breathes 100 per cent oxygen, the presence of a shunting of blood from the right side of the heart to the left side without oxygenation of the lungs can be determined. The oxygen serves to increase its barometric pressure to 760 mm. mercury and negate pulmonary ventilatory factors. Unsaturation may be present only with exercise, or if severe, may be present at rest as well. There are three causes for this unsaturation:

1. Large septal defect with turbulent

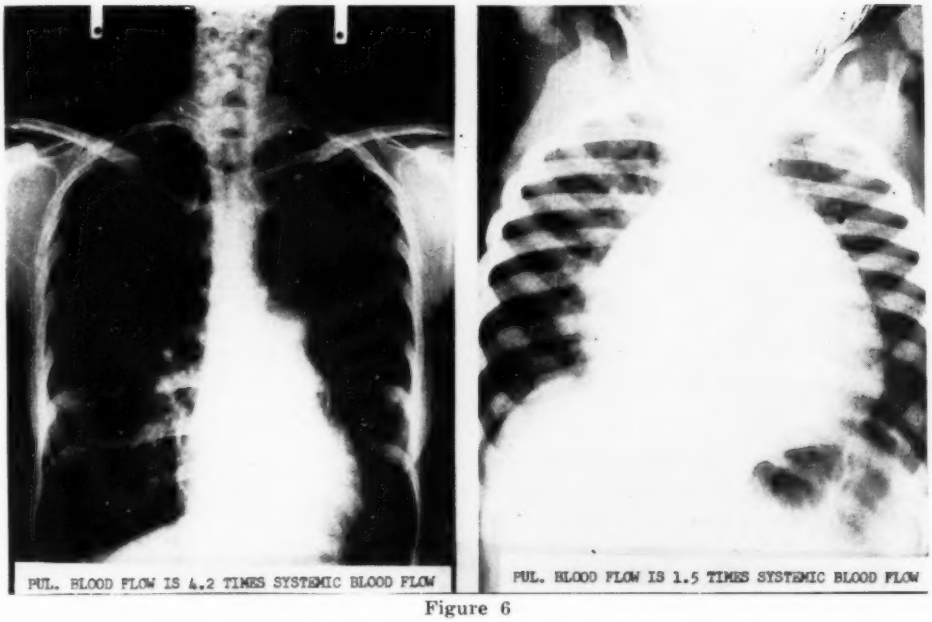

Figure 6

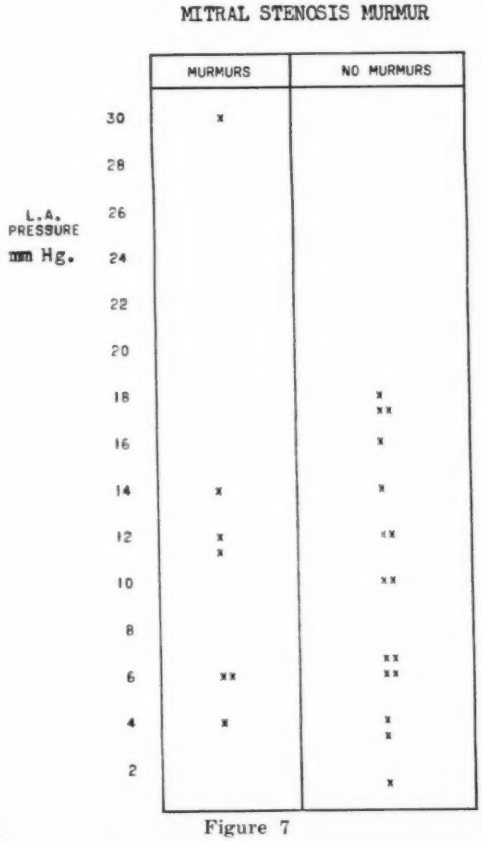

Figure 7

admixture of atrial blood.

2. Right heart failure with increased pressure in the right atrium, and reversal of the flow from right atrium to left atrium, instead of the usual left atrium to right atrium direction.

3. Pulmonary vascular damage associated with atrial septal defect.

Although one factor may be more important in a given case, all three usually contribute. Probably, the pulmonary factor is of the least importance.

Nine of the patients had this arterial unsaturation. These patients were the most severely incapacitated of the group, and presented the poorest prognosis. Indeed, 4 of these patients are already known to be dead. One patient, who had a slight arterial unsaturation during exercise, subsequently became pregnant and expired during delivery.

Surgical correction is most urgently needed in those who present arterial unsaturation. It is probable that correction should be done in all patients who present more than moderate symptoms. Among the considerations for indication for surgery, one particular caution must be ob-

served. Should the pulmonary flow be less than the systemic flow, as was illustrated in one of our patients, surgery should not be considered. In this instance, the pulmonary arteriolar disease is so severe that blood is actually shunted from the right heart through the defect to the left heart without passage through the lungs. Pulmonary hypertension here is very severe. Closure of this defect necessitates the passage of all blood from the right side of the heart to the lung before entering the left side. This results in a severe acute cor pulmonale, a fatal combination.

SUMMARY

Observations on 41 cases of proven atrial septal defect are presented. Criteria for diagnosis are presented. There is a correlation of the severity of symptoms with the height of the right heart pressure. There was no correlation of the pressures, shunts, and blood flows with fluoroscopic findings. The presence of Graham-Steele or mitral stenosis murmurs did not correlate with pressures or flows in the pulmonary artery or left atrium. Pathogensis of cyanosis is discussed, and its surgical connotation indicated.

THE PATIENT WITH MINIMAL UROLOGIC SYMPTOMS *

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Seemingly insignificant symptoms arising from the urinary tract are often the only signs of serious genitourinary disease. Unless the physician specifically looks for and heeds these signs, serious urologic conditions can easily be overlooked.

Urologic disease can affect both young and old alike but is frequently of a more serious nature in children since their symptoms may be minimized or ignored. The two most important symptoms in children which are frequently ignored are enuresis and pyuria.

ENURESIS

Enuresis is not considered pathologic until the child reaches five or six years of age. However, it is a mistake to tell the parents of older children with enuresis that their child will outgrow this distressing symptom. Although most of these cases are psychosomatic in origin, a small number actually are due to real urinary pathologic conditions. To ignore enuresis completely is to run the risk of overlooking some major urinary condition which could cause irreversible damage if not corrected. The most important pathologic process causing enuresis is some kind of obstruction at the bladder neck, such as contracture of the internal vesical orifice, prostatic valves in the male, hypertrophy of the verumontanum in the male or posterior urethritis in either sex due to urinary infection.

PYURIA

The second most important urologic sign in children is pyuria. There should never be any pus cells in a centrifuged wet smear of a properly collected specimen of urine. A properly collected specimen is a second glass specimen in the male and a catheterized specimen in the female. Pus in the urine may or may not be accompanied by other urologic symptoms but it must be considered evidence of major urologic disease until proved otherwise by appropriate diagnostic methods.

The development of fine urologic instruments of small calibre, current refinements in diagnostic technic and administration of anesthetics make it possible to make complete urologic studies in all children, regardless of age, even newborns. We believe that all children with enuresis or pus in the urine, even a single episode of pyuria, deserve complete urologic study to rule out any major urologic problem. Complete urologic evaluation should include, of course, urinalysis, physical examination, and at least intravenous pyelography. These studies can be easily carried out by

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 4, 1955.

† From the Department of Urology, Ochsner Clinic, New Orleans.

any general practitioner who has access to an x-ray machine. More elaborate studies which sometimes are required include retrograde pyelography, cystoscopy, retrograde cystography and aortography. This last mentioned study is usually best carried out by a urologist because special equipment is necessary for correct performance.

HEMATURIA

In adults urologic symptoms sometimes can be just as subtle as those in children. Probably one of the most important of these is a single episode of either gross or microscopic hematuria. Blood in the urine is always an important diagnostic sign regardless of the amount. To attribute such an episode to passage of a small stone or simply nephritis is to act like the proverbial ostrich with his head in the sand. It is characteristic of tumors of the renal cortex to cause intermittent bouts of hematuria. As the tumor invades the pelvis, some of the smaller blood vessels are ruptured causing a shower of blood or red cells with regeneration of the pelvic epithelium over the tumor. The bleeding stops until the tumor has grown a little more and invaded a little further when it will recur. Several months may elapse between the first and second episodes of bleeding and by this time the opportunity for cure may have been completely lost. It is foolhardy to assume the cause of the bleeding without actually confirming it by accurate urinary study. All tumors of the urinary tract, whether primary or secondary, can cause blood in the urine on occasion.

FEVER

Another symptom which might be considered relatively minor is fever of unknown origin. All patients with such fever should have urologic study not only to determine whether the fever is due to urinary infection but also to rule out renal tumors. Patients with large renal tumors characteristically have a low grade fever probably as the result of necrosis and absorption of portions of the tumor.

HYDRONEPHROSIS

One of the more common types of renal disease is hydronephrosis. It is caused by partial obstruction to the flow of urine from one or both kidneys and is generally of rather insidious onset. Once it has become fully developed, however, it usually produces severe symptoms which leave no doubt as to the correct diagnosis, although a few patients have only minor urinary symptoms or none at all. For example, the patient may complain of a dull ache in one flank, which may be diagnosed as a muscle strain, prostatitis or some other minor disease. Other patients with this lesion do not have any urinary symptoms at all but have complaints referable to the gastrointestinal tract, such as epigastric discomfort associated with eating, or pain in the right upper abdominal quadrant frequently characteristic of or simulating gallbladder disease. We have seen several patients who have undergone several major abdominal explorations and removal of various organs before any one thought of the urinary tract as the possible source of the primary symptom. Not uncommonly patients with these types of symptoms will have a severely damaged kidney by the time the correct diagnosis is made and they will lose this kidney. Ideally, of course, an attempt should be made to conserve as much renal tissue as possible rather than allow it to be destroyed by failure to make the correct diagnosis.

CARCINOMA OF PROSTATE

In recent years the medical profession and the public in general have become much more aware of the problem of carcinoma of the prostate. The number of cases of early prostatic carcinoma which we see are still extremely small compared with the total number of cases which the average urologist sees. Successful treatment of this disease is not necessarily a urologic problem but is the concern of the entire medical profession, and particularly the general practitioner, who sees the patient frequently and has the opportunity of discovering small hard nodules in the prostate long before the urologist might. One of my professors once told me that he could find more pathologic conditions

with his index finger in the rectum than he could with his stethoscope. The patient with early carcinoma of the prostate, that is, one that can be cured by radical perineal prostatectomy, has no urologic symptoms at all. Symptoms appear only after the lesion has spread beyond the capsule of the prostate or the tumor has become large enough to obstruct the neck of the bladder. Frequently, one of the first symptoms of carcinoma of the prostate is mild backache produced by metastatic disease in the spine, and again the diagnosis is confirmed by inserting the index finger in the rectum. Although the disease is not amenable to cure in this stage, both the tumor and the pain can be controlled with female sex hormones or with orchiectomy.

It is entirely possible for a man to have few urologic symptoms despite a large decompensated bladder with considerable residual urine and severe renal damage from back pressure. He may be urinating only three or four times a day, seldom getting up at night and complaining only of a small weak stream. This is another indication of far more serious disease than the urologic symptoms would suggest. In men 50 years of age or older whose urinary habits have gradually changed it is prudent from time to time not only to palpate the prostate rectally but also to determine whether there is any residual urine. An outstanding case of this type was a man first seen three years ago whose presenting complaint was weakness, which was subsequently found to be due to rather severe anemia secondary to bilateral chronic pyelonephritis, which in turn was due to 4000 cc. of residual urine with back pressure and atrophy of both kidneys. He insisted that he urinated normally except that his urinary stream was smaller than it once was. It was interesting to note that in this particular patient the blood urea nitrogen on admission to the hospital was 90 mg. per cent. It required almost a year before his condition was finally corrected, although even now his renal function is far from normal, but he is at least emptying his bladder as a result of transurethral resection which was performed after a prolonged period of urinary drainage. This patient was sent to me by an alert internist who thought that there must be some explanation for the severe anemia in the absence of obvious hemorrhage.

CONCLUSION

In conclusion, let me repeat again that patients with urinary symptoms which seem to be relatively innocuous do not always have minor lesions. Pathologic alterations in the urinary tract, in particular, frequently cause few or no symptoms until rather late and unless this is kept in mind during routine examination of patients, such conditions might be overlooked. There is nothing more tragic than a small child with both kidneys completely destroyed, either by infection or by obstruction to the flow of urine, which could easily have been detected if his "minor" symptoms had been properly interpreted.

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ROUTINE PHOTORADIOGRAPHY OF THE CHEST; ITS VALUE TO THE PRACTICING PHYSICIAN *

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Photofluorography is the process of photographing a fluorescent image of the chest on a film of reduced size, using a special camera. Bleyer,[1] in 1896, was the first to apply it only six months after discovery of the x-ray by Roentgen. It is familiar to all physicians and many lay persons today, 20,000,000 persons having submitted to this method of examination in World War II. Within the past two decades, it has been used increasingly in general hospitals on patients entering for any type of medical service. When used in this fashion, photofluorography is of

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 4, 1955.

† From the Department of Medicine, Tulane University School of Medicine, and the Charity Hospital of Louisiana.

tremendous service to the practitioner. Many physicians, not appreciating its value, look upon it as a research tool or as something beyond the reach of the average hospital. In an effort to demonstrate what such a system can achieve for a general hospital, results of operation at the Charity Hospital of Louisiana are briefly stated.

In the past ten years, approximately 590,000 seventy millimeter films have been exposed at the Charity Hospital X-Ray Unit. With the exception of those too sick to stand, all patients admitted to the institution and all outpatients have had the benefit of photofluorographic studies. The results have been most illuminating. Of these patients 3.42 per cent have been found to have pulmonary lesions strongly suggesting tuberculosis; 3.06 per cent were found to have significant cardiovascular disorders while 2.67 per cent displayed nontuberculous disease of the lungs. Thus, 9.15 per cent or nearly 1 in 10 patients had some demonstrable disease of the heart or lungs, usually not suspected when the patient first reported to the hospital.

I. TUBERCULOSIS

The practitioner obviously wants to know whether his patient has tuberculosis of the lungs in any phase of its evolution. Phthisis may progress as long as two years without producing any symptoms; some patients may intentionally or unintentionally fail to report symptoms of pulmonary disease when being treated for some other illness; therefore, nothing less than routine chest x-ray examination will uncover such lesions. The public has come to accept chest x-ray examinations as customary; good medical practice to-day dictates that it be part of each general medical examination. It is to be emphasized, of course, that the photofluorogram does nothing more than the standard 14 by 17 inch film in this respect: it renders visible a pulmonary lesion but does not determine immediately the cause, activity or prognosis. Other methods of physical and laboratory investigation are needed for this. The photofluorogram does very quickly, efficiently, and economically show a lesion where least suspected as in the following case:

J. M., 35 year old white female, was admitted with a diagnosis of intestinal obstruction. Routine photofluorography demonstrated bilateral cavitary pulmonary disease; further studies made possible a diagnosis of tuberculous enterocolitis complicating far advanced pulmonary tuberculosis. Antibiotic therapy accomplished inactivation of the pulmonary disease as well as relief of the intestinal symptoms.

II. CARDIOVASCULAR DISEASES

The exact proportions of persons entering a general hospital with previously undetected cardiovascular disease is still unknown. In a small series of those studied at the Charity Hospital[2] it was estimated that 4 of each 1,000 patients had cardiac disease suspected neither by them or by the original physician. Approximately eight times this number (3.06 per cent) were determined to have cardiovascular disease of some type although most of them knew of its presence. It should be recalled that many of these persons had been brought to the hospital for complaints unrelated to the circulatory apparatus. Without routine photofluorography, many of them would have submitted to various operative procedures before their ability to withstand such strains had been properly evaluated. The photofluorogram, like the standard 14 by 17 inch film, often fails to diagnose cardiovascular disease before there is significant alteration of the cardiac silhouette or before other demonstrable abnormalities appear. It is therefore not as good a "screening" device for cardiac disease as it is for pulmonary lesions; yet it does bring to light a certain number of circulatory impediments which might not otherwise be considered during the course of the medical service for which the patient came to the hospital originally.

III. NONTUBERCULOUS PULMONARY DISEASE

Contrary to popular belief, many nontuberculous affections of the lungs may not produce material evidence of illness until far advanced. Many a patient has reported for some entirely unrelated complaint only to be found by routine photo-

fluorographic study to have an intrapulmonary disease threatening life. To catalog the bewildering array of such conditions would be almost a hopeless task. Pulmonary emphysema, that common disturber of the health of our aging males, has been particularly frequently encountered; tumors of the lungs in adults and children; histoplasmosis, pneumonia, and cystic disease are at times tolerated by the patient with astonishingly few symptoms. Over and over, the lesson has been taught that the symptoms of intrathoracic disease may be few and delayed in appearance; physical examination may be disappointing. Only the routine liberal application of radiography of all patients coming to a general hospital will make it possible that these abnormalities are found early enough to permit radical and lasting improvements.

IV. MISCELLANEOUS CONDITIONS

Often extrathoracic disease may encroach on the thorax and first be noted on the routine film of the chest. Thyroid enlargements, esophageal diverticula, diaphragmatic herniae, chest wall tumors, rib and bone destruction may thus be diagnosed. It is instructive to ponder the number of diagnoses made by a careful study of the roentgenogram.

V. STIMULUS TO THE EARLY DIAGNOSIS OF INTRATHORACIC DISEASE

When a large volume of photofluorograms is taken, the cost per film exposed is quite low. Although few places are equipped to take photofluorograms at the Charity Hospital rate of 31 cents,[3] most places can render this service fairly cheaply. The practitioner who becomes accustomed to the enormous amount of information presented by the routine photofluorogram, soon learns to expect such service generally and he can obtain it. Almost any general hospital, regardless of its size, can operate such a unit economically. If the volume of persons examined is not large enough or if special circumstances dictate a different approach, the practitioner can obtain the same degree of assistance in diagnosis—albeit at a greater cost to his patients—by insisting that each new patient and each hospital admission have a conventional 14 by 17 film of the chest. Statistical analyses have repeatedly shown that the individual interpretation of the film is the all-important factor and that the medium used (35 mm.. 70 mm., 4 by 5 inch or 14 by 17 inch film) is distinctly of lesser importance.

SUMMARY AND CONCLUSIONS

Photofluorography of the chest performed routinely is of value to the practitioner in several respects: it permits him to make an earlier diagnosis of intrathoracic disease (whether cardiovascular, tuberculous or nontuberculous) and to single out for further examinations those patients needing such studies. It is economical, quick, and effective, and it is accepted by the lay public. When applied as a routine to all patients entering general hospitals for any type of medical service, it sharply minimizes the number of undiagnosed intrathoracic disorders and markedly enhances the quality of medical care given.

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GALL BLADDER SURGERY: A COMPARATIVE STUDY *

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D. V. CACIOPPO, M. D.
BATON ROUGE

INTRODUCTION

The purpose of this paper is to consider the status of gall bladder surgery in our community. In order to do this we have reviewed the current literature, summarized the present day thought on the management of gall bladder disease, and then compared a group of cases done locally in two private institutions. In our community we have two private hospitals totaling approximately 450 beds. The charity institution for this area is in a

* Presented at the Seventy-fifth Annual Meeting of the Louisiana State Medical Society, New Orleans, May 4, 1955.

nearby city. Consequently, all of the patients admitted are private patients treated by private physicians except when emergency indicates otherwise. We have reviewed 450 cases done by a number of surgeons. Some of the surgeons are surgical specialists and others are general practitioners.

HISTORICAL

Gall stones have been recognized as a clinical entity for several hundred years. Robinson quotes a publication by Beneverius dated 1506 on gall stones. Jaundice, caused by common duct stones, was described by Michael Ettmüller 246 years ago; the common bile duct was first explored by Mossey of England in 1882. Langenbock and Kümmel introduced the operation in Germany in 1884. The first successful operation for common duct stones was performed by Knowsley-Thornton in 1889. Transduodenal approach for ampullary stones was carried out by Charles McBurney in 1891.

INCIDENCE

Cholecystectomy is one of the most frequent major surgical procedures. The incidence of gall stones among adults over thirty years of age has been variously estimated as from 10 to 20 per cent. It occurs approximately 2 to 1 in females as compared to males. In our local cases the ratio was 4 to 1. Furthermore, in our cases it occurred comparatively infrequently in colored females as compared to white females and much less frequently in colored males. The relative number of admissions may explain this partly; and, also, it may be that the lower income group does not seek medical aid except for acute symptoms.

Biliary tract disease is the most common condition requiring surgery in the elderly patient. In 1000 routine postmortems, Krump found gall stones in approximately 50 per cent of the 60 to 80 age group. In Adams' and Stranahan's report of an analysis of over 1000 cases from Leahy Clinic, 75.2 per cent occurred between the ages of 31 and 60. In our series, 71.1 per cent of our patients were in this age group.

THE DIAGNOSIS

This, of necessity, must be divided into acute cholecystitis and chronic cholecystitis with cholelithiasis. In our group 42 (9.0 per cent) cases had acutely inflamed gall bladders and of these 89 per cent had stones. In most cases, acute cholecystitis is a complication of the former. In acute cholecystitis the usual initiating factor for the process is impaction of a stone in the cystic duct. In some patients with acute cholecystitis the initial attack is when the patient is first seen. It may be well to consider the diagnosis of acute cholecystitis first and dispense with it as it differs considerably from chronic cholecystitis. Frequently one is able to secure a long history of gall bladder disease for which surgery was refused or not advised. The signs and symptoms vary a great deal. Pain is usually in the right upper quadrant and may have originated as a diffuse epigastric discomfort. Fever varies from normal to 103 F., sometimes higher. The important signs in the cases we have seen are the local findings of marked tenderness in the gall bladder area with muscle guarding and the presence of a tender, tense mass sliding below the costal margin. The WBC varies, but usually shows an increase of 10 to 20,000 with polymorphonuclear leukocytosis. There may or may not be a history of jaundice or nausea and vomiting. The symptoms are sometimes not as severe as the local and operative findings very often indicate. From symptoms, physical examination or laboratory findings, it is difficult to estimate the exact nature of the pathology — namely, whether the gall bladder is gangrenous or whether perforation is impending.

The ideal management of acute cholecystitis is early operation with removal of the gall bladder and exploration of the common bile duct as indicated. In about half of the cases, because of delayed hospitalization, difficulty in making the diagnosis and poor general condition of the patient, this becomes too dangerous. Under these circumstances one is faced with

the choice of conservative treatment with its attendant dangers, or a two stage procedure consisting of emergency cholecystostomy followed by an elective cholecystectomy in approximately one month. Although this time limit apparently is ideal and has been suggested by many authors including Dunphy and Ross, and Ochsner, De Camp, et al, one must remember that the inflammatory process in acute cholecystitis begins as a purely chemical one and that the invasive infection is superimposed after approximately forty-eight to seventy-two hours. With the use of antibiotics it is possible to operate upon these patients at a later hour and still accomplish the desired results. One must be sure that the acute process is subsiding before he elects to treat acute cholecystitis conservatively and defer operation. In this series of 42 cases of acute cholecystitis, cholecystostomy was performed in six (14.2 per cent). This procedure was reserved for the critically ill patients or those in whom the local findings made cholecystectomy hazardous. In the entire 42 cases one death occurred, making a mortality rate of 2.4 per cent.

To return to the diagnosis of chronic cholecystitis and cholelithiasis, a careful history is very important, although dyspepsia or the so called "windy indigestion" may be caused by other conditions such as peptic ulcer, hiatal hernia, cardiac disease or irritable colon. Pain is the most important symptom. Littler and Ellis point out that it very often has a nocturnal frequency. In Adams and Stranahan's cases, pain again was the leading symptom occurring in over 90 per cent of their cases. Nausea and vomiting is the next most common symptom occurring in some 65 per cent of Littler and Ellis' cases. The history of jaundice occurs in some 18 per cent of cases. Cholelithiasis can most often be confirmed by x-ray. In 1924, Graham and Cole did the first cholecystogram. Today, with the newer iodine preparations such as Telepaque, a positive diagnosis of cholelithiasis can be predicted in some 95 per cent of cases. Only acute or advanced chronic liver disease will interfere with the tests. The test is also probably worthless in the presence of jaundice. Only some 10 per cent of gall stones are radiopaque on routine x-ray study, but by cholecystography approximately 70 per cent of the stones can be visualized. When one adds the gall bladders that do not visualize the percentage becomes quite high in which a correct diagnosis of cholelithiasis can be made. In the Lahey Clinic series the correct diagnosis was stated to have been made in 97.6 per cent of the patients examined by x-ray. In 21.6 per cent, a diagnosis of nonfunctioning gall bladder was made, and in all of these cases stones were found at operation.

Of the 450 cases in our series, 329 had the x-ray findings recorded on the hospital record. Of these, in 238 (72 per cent) stones were visualized preoperatively. In 69 (21 per cent) there was nonvisualization and, of these, stones were found at operation in 63. In 17 (5 per cent) there was poor visualization, and of these there were seven in which stones were found at surgery. In five in which there was normal visualization, no stones were found in any at surgery.

INDICATION FOR OPERATION

Once the diagnosis of chronic cholecystitis with cholelithiasis has been substantiated, one is justified in recommending surgery unless some strong contraindication to operation exists, as the morbidity and mortality are less from operation than from possible complication of calculi of the biliary tract. If the patient wishes to put up with indigestion and pain, that is his choice. However, the impelling reasons for recommending cholecystectomy are to avoid serious complications such as (1) common duct stone, (2) potential hazards of attacks of acute cholecystitis, (3) development of a cholecysto-enteric fistula with or without gall stone intestinal obstruction, and (4) patients with long standing gall bladder disease usually develop cholangitis, pancreatitis and hepatitis. In all of the above conditions, the mortality is increased. A further indica-

tion is that some 2 per cent to 4 per cent of the gall bladders which show x-ray evidence of gall stones will also contain a malignancy. The curability rate of carcinoma of the gall bladder is reportedly 2.5 per cent. In our experience we have seen only one carcinoma of the gall bladder operated upon with any hope for cure. All other carcinomas of the gall bladder were beyond cure. The percentage of tumors in the gall bladder vary considerably in different institutions; however, they are almost always associated with stones. In the Leahy Clinic series only four tumors were found in 1036 cholecystectomies making the incidence in this series 0.3 per cent.

This brings us to the problem of the silent gall stones. Should the silent gall stones be removed? Today, so many patients with G. I. symptoms are admitted to the hospital for x-ray work-up (because their insurance policies dictate). Cholecystogram is one part of that work-up. When stones in the gall bladder are noted, are we obligated to recommend surgery in all cases? Most surgeons will agree that surgery is indicated on the basis of avoiding serious complications as mentioned previously. Comfort et al in the study of a ten to twenty year follow-up of 112 cases of silent gall stones found that 51 or 45.5 per cent developed symptoms. Of the 51, surgery was done on 24 with 3 deaths resulting in 12.5 per cent mortality. Twenty-eight patients died of causes unrelated to gall bladder disease. Of the 51 developing symptoms, 16 developed colic, 30 indigestion, 5 jaundice and colic. In summary, therefore, the indication for cholecystectomy with the presence of cholelithiasis is to prevent these serious complications of acute cholecystitis, common bile duct stone, etc.

In a study of biliary tract surgery in the aged patient, Strohl and Diffenbaugh found that biliary tract disease was the most common condition requiring surgery in the elderly patient. Acute cholecystitis was present in 1 of every 4 patients with cholecystitis, and common duct stones twice as frequent. Common duct exploration further adds to the risk of surgery in aged patients. The mortality rate was 9.3 per cent. Age is not a contraindication to biliary tract surgery. Surgery should be done before serious complications develop. The large solitary stone is the most common offender causing acute cholecystitis as it drops down and blocks off the cystic duct.

COMMON DUCT EXPLORATION

We have used the following indications in our decision as to when the common duct should be explored at the time of cholecystectomy: (1) Palpable stone in the common duct; (2) dilation or thickening of the common duct; (3) small stones in the gall bladder; (4) dilated cystic duct; (5) history of colic or jaundice, or jaundice with chills and fever. The presence of jaundice indicates common bile duct stone in about 50 per cent of cases; in the other 50 per cent it is due to cholangitis or hepatitis. It should also be pointed out that about 50 per cent of patients with stones in the common bile duct do not have jaundice. In a report from the Mayo Clinic of the biliary surgery for 1953, of 1093 patients operated upon for chronic cholecystitis, the common bile duct was explored in 286 cases; and in this number, stones were found in 123 of the cases. In 1000 routine autopsies, biliary duct stones were found in 24 per cent of the bodies with chronic cholecystitis. In the Lahey Clinic cases as reported by Adams and Stranahan, 45.7 per cent of the cases were explored and 36.9 per cent of the ducts explored contained stones. In our local cases, 21.3 per cent of the cholecystectomies had choledochotomy, and of this number stones were found in 26 per cent. Many times the surgeon will say, "no stones are palpated in the common bile duct and the bile duct does not appear dilated and is therefore not explored". External inspection and palpation of the common bile duct to detect stones are highly unreliable. We do not feel that the common bile duct was explored in all indicated cases

in the number that we have reviewed. However, the addition of choledochotomy to the operative procedure, in the hands of the occasional operator, will certainly increase the hazard of the operation to the patient. Before making any recommendations, one must weigh this hazard against the state of conditions when a common duct stone is left behind.

The standard method of choledochotomy and closure over a T-tube with biliary drainage works well in most cases; however, there are times when it is necessary to do a transduodenal exploration of the common bile duct. This is especially true when a stone can be felt in the distal one-third or the retroduodenal portion of the common bile duct. Preston states that according to Zollinger, autopsy statistics reveal that duct stones are overlooked at operation in about one-third of the cases. When one does not feel entirely pleased with the result of the exploration by the standard method he should use a transduodenal approach, especially if there is any question of a lesion of the ampulla of Vater. Landry and Walters reported 5 cases in which very small ulcerating malignant lesions were demonstrated in the ampulla of Vater in this fashion.

THE HAZARDS OF GALL BLADDER SURGERY

The three great hazards of gall bladder surgery are hemorrhage, common duct injury, and hepatic artery injury. "Most strictures of the biliary passages following cholecystectomy are due to poor exposure, consequent upon poor anesthesia, inadequate or badly placed incision, over-confidence, haste, hemorrhage, or a lack of anatomical knowledge on the part of the surgeon."[6] If one is careful to identify the cystic artery and ligate it separately, and dissects the cystic duct at its entrance into the common bile duct, and identifies the hepatic ducts before ligating the cystic duct, he will avoid many injuries. The common injuries that occur are due to grasping blindly into a pool of blood with a hemostat when the cystic artery is torn, or to improper identification of vital structures. In this way one can injure the hepatic or common duct, the portal vein or the hepatic artery. Injuries to the hepatic artery or its branches lead to liver necrosis and death. The common duct injuries can be many but can usually be blamed upon inadequate dissection and identification of the anatomical structures. Once a calamity with the common bile duct occurs and is recognized, it is best to insert a tube into the duct and await another day if the operator does not feel capable of the task.

In the fair risk patient, common duct exploration should not add appreciably to the operative risk, if careful attention is given to minor details of operative and postoperative care. In the period of 1953 at the Mayo Clinic, in which cholecystectomy for benign lesions in 1125 cases was done, there was a 0.5 per cent mortality rate. In 179 cases in which there was choledocholithiasis, the mortality rate was 1.1 per cent. The Lahey Clinic series reported 0.9 per cent. The local mortality rate was 2.2 per cent. The mortality rate reported from most of the large clinics over the country for cholecystectomy alone is less than 1 per cent.

The causes of death when examined in the Mayo Clinic series were cardiac or vascular almost without exception. In our series there were 11 deaths or 2.4 per cent of the total. The causes of death in these cases can be listed as follows: hepatic failure—4, intestinal obstruction—3, lower nephron syndrome — 2, pulmonary embolus—1, and cardiac arrest—1. With more careful preoperative preparation and postoperative care the mortality from liver failure, lower nephron syndrome, and intestinal obstruction might be decreased. With the early diagnosis of postoperative intestinal obstruction and the early correction thereof, this cause of mortality could be reduced. It is urged that a study of the causes of death always be made in any local survey. It is in this way that the mortality rate can be appreciably lowered.

Aside from the morbidity and mortality already discussed there are a number of

poor results following cholecystectomy for cholelithiasis. In a study of the significance of the postoperative symptoms, Whitehouse has placed these bad result patients in three groups: (1) failure to make a complete diagnosis such as associated peptic ulcer, cardiac disease, etc.; (2) technical reasons, namely, common duct stone being left behind, long cystic duct remnant and strictures of the biliary duct; and (3) dyskinesia of the sphincter of Oddi or pyloric spasm. In another study of the postcholecystectomy syndrome, Hume and Buckston have reported seven cases which they have operated upon and recovered cystic duct stumps which were found to be fibrous and upon excision and examination they contained amputation neuromas. All seven patients were asymptomatic during a long follow-up.

SUMMARY

A survey of 450 cases of cholecystectomies done in two private hospitals is presented. Cholelithiasis was present in 90 per cent of these. Choledochostomy was performed in 96 (21.3 per cent), and stones were found in the common bile duct in 25 (26 per cent) of these.

Cholecystectomy should be advised in all cases of cholelithiasis as the morbidity and mortality rates are less from the operation than from the possible complications.

In acute cholecystitis surgery is advised if seen within three to four days from onset of disease. If seen after this, conservative treatment is recommended unless progression of symptoms and findings is noted, and then cholecystostomy may be necessary. Cholecystectomy should be done four to five weeks after subsidence of the acute cholecystitis. Cholecystostomy is reserved for the critically ill patients or where local findings make cholecystectomy hazardous.

The indications for choledochostomy are presence of jaundice, palpable stones in the common bile duct, dilated or thickened bile duct, small stones in the gall bladder, history of severe colic or jaundice with chills and fever, and dilated cystic duct.

In gall bladder surgery, proficient surgical technique, adequate exposure, good light, and anatomical identification of vital structures are essential in preventing surgical accidents.

In the elderly or jaundiced patient, preoperative preparation and postoperative care should be done meticulously.

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TRAUMATIC HYPHEMA *

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Hyphema occurs with more frequency than is emphasized by the standard textbooks on ophthalmic disease, especially in blunt injury to the eye. Traumatic hyphema should be amplified because of the

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potential seriousness of the condition. Many eyes can be saved by adequate and timely therapy. General practitioners and physicians with an industrial practice should realize that these injuries are important and should be searched for, even in the face of more serious injuries.

PRESENT SERIES

This group of 146 cases of traumatic hyphema was seen at Charity Hospital in a five year period. All cases occuring in this period were not included—only those in which the records were adequate for this review.

TABLE 1
ETIOLOGY

Article	No. Cases
Bee Bee	26
Rock	26
Stick	16
Unknown	7
Seashell	3
Shoe	3
Rope	3
Mud	3
Rifle part	2
Bullet wound	2
Blunt injury	2
Top	2
Beet	2
Bottle	2
Baseball	2
Nail	2
Toy pistol blow	2
Wood	1
Picture frame	1
Doorspring	1
Torpedo	1
Corn cob	1
Soap	1
Fist	1
Arrow	1
Ice cube	1
Rubber band	1
Orange	1
Club	1
Metal pipe	1
Rubber sheet	1
China berry	1
Kick	1
Flower pot	1
Sawdust	1
Penny	1
Hanger	1
Cucumber	1
Chain	1
Tree branch	1
Potato	1
Wrench	1
Toy pistol shot	1

Table 1 indicates the varied assortment of objects which caused injury. The most common projectile, beside the more ordinary missiles, is the air gun propelled "BB" pellet. It heads the list in other series. Adequate legislation should outlaw this unnecessary toy.

There were 127 (87 per cent) male cases in this group and 19 (13 per cent) female—an indication that it usually occurs in the more vigorous sex. Forty-four (30 per cent) of the cases involved the Caucasian race and 102 (70 per cent) were in the Negro race. These latter percentages may not reflect ordinary conditions, as all cases were treated in a charity institution.

It is interesting to note that there are usually two types of cases seen: youngsters hurt at play, and older persons involved in an altercation. The youngest case occurred in a 1 year old and the oldest, 60 years, with an average of 15.9 years.

Cases were divided into two types: partial hyphema, (114 or 79 per cent), where the anterior chamber is partially filled, and complete hyphema (27 or 18 per cent) in which the anterior chamber is completely full of blood. Five cases of unspecified type were included because of their interest. This is also a convenient way to divide cases for therapeutic and prognostic reasons, as will be brought out later.

There was no preponderance of unilaterality and, of course, no reason for it. No case was involved bilaterally, but the right eye was injured in 75 cases (51.8 per cent), and the left eye in 71 cases, (48.2 per cent).

Hyphema lasted for an average of 9.7 days, with a range of two days to six months. These figures include time after the accident, before, and during hospitalization.

The average length of hospitalization was 8.64 days, with a range of 1 to 31 days. Readmissions for further therapy

were not included in these figures—only the primary hospitalization.

Cases were followed for an average of 147 days. Some were not seen at all after discharge from the hospital, but others were followed for as long as three years after their original injury. Enucleation cut short this period in 7 patients.

COMPLICATIONS

All complications are recorded in Table 2. About one-third of these patients suffered no complication of their blow or hyphema. Traumatic iritis was described in only 17.8 per cent of this group. Such a low figure, I believe, is due to lack of examination. All cases should exhibit signs of traumatic iritis. The same may be said of traumatic mydriasis. Although actual mydriasis may not be seen, some degree of sphincter paralysis is usually present. Vitreous hemorrhage was seen especially in older individuals and/or those with severe trauma. It resorbed surprisingly well in children, especially if it were not too massive. Secondary glaucoma followed mostly in those cases with complete hyphema and those with vitreous hemorrhage.

TABLE 2

Complications	No. Cases	Percent
None	51	34.9
Traumatic iritis	26	17.8
Secondary glaucoma	21	14.4
Recurrent hemorrhage	16	10.9
Vitreous hemorrhage	15	10.3
Traumatic cataract	11	7.5
Corneal staining	10	6.8
Traumatic mydriasis	9	6.2
Iridodialysis	8	5.5
Dislocated lens	4	2.7
Lid laceration	4	2.7
Corneal leucoma	4	2.7
Retinal hemorrhage	3	2.1
Phthisis	3	2.1
Pupillary membrane	2	1.4
Scleral rupture	2	1.4
Rupture of lens	2	1.4
Commotio retinae	2	1.4
Corneal abrasion	2	1.4
Macular degeneration	2	1.4
Fracture maxilla	2	1.4
Descemetitis	1	0.7
Limbal staphyloma	1	0.7
Proptosis and antral wound	1	0.7
Iris atrophy	1	0.7
Retinal tear	1	0.7
Lues	1	0.7
Organization of AC & Cornea	1	0.7
Anisocoria	1	0.7
Retinal detachment	1	0.7
Foreign body limbus	1	0.7
Tear of choroid	1	0.7
Conjunctival laceration	1	0.7

Secondary, or recurrent hyphema, is the complication most feared in an otherwise uneventful case. It was present in 10.9 per cent of this series. Hemorrhages recurred up to three times, and still a cure of the hyphema was obtained. This is not the usual situation, as recurrent bleeding often leads to complete filling of the anterior chamber and subsequent loss of the eye, due to secondary glaucoma, blood staining of the cornea, or surgical complications. Table 3 records the age and time that secondary hyphema occurred in relation to the injury and in relation to the paracentesis (if done) in 14 cases of secondary hyphema that occurred in this series. It will be noted that secondary hemorrhage developed, on the average, much later in these cases than in others in the literature. Thygeson and Beard [10] stated that the second and third post-traumatic days are those most to be feared. Secondary hyphema was seen at an average of 5.7 days after the injury in the cases being recorded, and occurred on the second day after paracentesis in both cases in this series where it developed. Nearly half of the recurrent hem-

TABLE 3

Case No.	Age	Secondary Hyphema Occured Days After Injury	Secondary Hyphema Occured Days After Paracentesis
2	9	2	–
8	8	2	–
7	8	3	–
13	10	3	–
5	5	3	–
1	9	4 & 10	–
6	6	4	–
10	2	4 to 7	–
15	8	6	–
12	9	6	–
4	55	7	–
14	13	7	2
9	9	9	–
11	11	14	2

orrhages in their series occurred in persons older than 13 years; whereas all but one case in the present series were 13 years old or younger.

No correlation of secondary hyphema to blood pressure, diabetes, blood clotting mechanism deficiencies, or drugs used, was made in this present group of cases.

Corneal staining was found in 10 cases, (6.8 per cent), and was evident, predominantly in those persons suffering a complete hyphema and glaucoma. Such a stain is dense at first, resorbing in months or years from the limbus toward the center. Simultaneously, the whole remaining stained area loses its denseness. Usually, vision does not return after this resorption because of other injuries. Retinal lesions, such as commotio retinae and simple hemorrhages were noted only in a small percentage of these cases, probably because a search for them was not made, rather than because of their absence. Many of these patients were children who put up such a struggle that it was unwise to attempt examination. In others, the hyphema and/or other complications, interfered with posterior segment examination.

THERAPY

The therapy used most often in this series was absolute bed rest, with the patient flat on the back or turned gently on the uninvolved side. Children and apprehensive adults should be well sedated to attain this end. Some children, who are uncooperative, should be restrained hand and foot. As Thygeson and Beard noted, however, excellent final results were obtained in many uncooperative patients, whereas, poor results were seen in those patients who were most obliging.

A bilateral ocular bandage was frequently used in these cases. Its purpose was twofold: to afford protection of the affected eye and to produce temporary amblyopia, so that the patient would not be tempted to strain and move himself, (and his eyes), around to observe activity in his surroundings.

Atropine was used in 81 per cent of the present series. The classical discussion of whether to use atropine or pilocarpine now is in order. The proponents of pilocarpine therapy say that the hyphema absorbs easier because there is more iris surface to effect absorption. Cordes and Horner also claim that it should be used with secondary glaucoma of hyphema. I believe that in secondary glaucoma of hyphema, the glaucoma is due to a massive anterior, or vitreous hemorrhage, which should be handled surgically, and use of miotics has no place in such therapy. The proponents of atropine say that the eye should be put at rest to allay secondary hemorrhage and to decrease traumatic iritis. This is reasonable, especially as Thygeson and Beard have demonstrated the frequent occurrence of ciliary body damage. However, Fralick claims that atropine used early, will produce vascular stasis, tissue engorgement, and edema in the anterior uvea. Such edema and engorgement, as is produced by trauma, is decreased by a miotic. So we see that there are valid arguments on either side. Cases have cleared up with either drug used, but personally, I prefer atropine.

Pilocarpine was used in 6 per cent of the cases in the present group, DFP in 1 per cent and prostigmine in 0.7 per cent. The latter two drugs are too powerful to be used in hyphema cases, as their pull may increase ciliary body damage.

Scopolamine was used in 5 per cent of these cases, and used only, I believe, when a sensitivity to atropine was present.

Homatropine was used in 6 per cent of the present series and is favored by those who use miotics with secondary glaucoma. They feel that if glaucoma develops, homatropine will be easier for miotics to overcome, rather than atropine.

Although 10 per cent neosynephrine was used in 6 per cent of cases, that too, is too powerful to be used in hyphema. If it were to cause a sudden strong pull on a synechium, a blood vessel could be torn and secondary hyphema result.

Ten per cent of cases were treated with topical cortisone, 1 per cent with intramuscular cortisone, and one case was

given the drug subconjunctivally. Benedict and Hollenhorst,[1] state that subconjunctival cortisone retards the rate of absorption of blood in hyphemic eyes. In addition, it may retard reparative processes that would keep secondary hyphema from occurring.

The problem of using agents to aid the blood clotting mechanism is well discussed by Thygeson and Beard. They conclude that vitamin K is ineffectual in hyphema, but recommend the use of rutin and vitamin C to reduce the possibility of capillary fragility. In the present cases, 20 per cent received rutin, 27 per cent received vitamin K, 24 per cent received vitamin C and 15 per cent received calcium. Vitamins A, B and D were used in a few of the cases here reported, but with no particular benefit and with no theoretical reason behind this therapy.

Dionine was used in one case to accelerate resorption of a corneal stain, but it did not accomplish its purpose.

TABLE 4
THERAPY

	No. Cases	Percent
Bed rest	130	89
Atropine	118	81
Bilateral patch	77	53
Vitamin K	39	27
Vitamin C	35	24
Rutin	29	20
Calcium 22	22	15
Compresses (Warm)	22	15
Fever therapy (Typhoid IV)	17	12
Cortisone (Topical drops)	14	10
Dehydration	13	9
Paracentesis	12	8
Irrigation anterior chamber	10	7
Fever therapy (Milk IM)	10	7
Homatropine	9	6
Neosynephrine 10%	9	6
Pilocarpine	9	6
Scopolamine	8	5
Compresses (Cold)	5	3
Vitamin B	3	2
Vitamin D	3	1
D F P	2	1
Cortisone (IM)	2	1
Salicylates	1	0.7
Cortisone	1	0.7
Dionine	1	0.7
Varidase (in AC)	1	0.7
Vitamin A	1	0.7
Prostigmine	1	0.7

Fever therapy, (IV typhoid), was used in 12 per cent of these cases and 7 per cent received IM milk. Ordinarily this type therapy is contraindicated in hyphema, as is cortisone therapy. In addition, fever therapy makes the patient quite restless and uncomfortable. If there is a lens rupture, fever therapy may be used, but only then.

Salicylates were used as therapy in only one instance in this group of cases, so cannot be evaluated as therapy.

Warm compresses were used in 22, (15 per cent), of these cases and cold compresses in 5, (3 per cent). Both are contraindicated in hyphema as any compress will necessitate removing the bandage and other manipulations which are unecessary and particularly disturbing in children. Warm compresses will increase blood vessel size and predispose to secondary hemorrhage.

Nine per cent of these cases received dehydration therapy, as recommended by W. B. Clark. All cases but 2 did well, one who had severe injury and the other who had luetic optic atrophy. This type of treatment appears on theoretical grounds and clinical results, to be reasonable. Those cases with secondary glaucoma would appear to be especially benefitted.

Surgical therapy was employed as follows: paracentesis, 12 cases, (8 per cent) and irrigation of the anterior chamber in 10 cases, (7 per cent). Simple, partial hyphema is not a surgical problem. Handling of partial hyphema with complications depends on the complications and is left to the surgeon's judgment.

Complete hyphema is always a surgical problem and should be operated as soon as possible. Incision should be done at twelve o'clock on the limbus and with a keratome. A large enough incision should be made, (before loss of aqueous), so that clots can be evacuated, or so that it may be enlarged easily with scissors. The incision, incidentally, should be corneal, to avoid scleral bleeding. Anterior chamber irrigation with warm saline should be done to rid the anterior chamber

of clots. Blind groping for clots with forceps is to be discouraged.

One patient with complete hyphema had the anterior chamber irrigated with dilute streptokinase-streptodornase solution. Not only did the clot remain, but a terrific uveitis resulted. Such treatment is not recommended.

RESULTS

I	Total cases (146)		
	Total cured of hyphema	133	(91%)
	Total lost eyes	12	(8.2%)
	Deserted	1	(0.7%)
II	Partial hyphema cases (114)		
	Total cured of hyphema	113	(99.1%)
	Total lost eyes	1	(0.9%)
III	Complete hyphema cases (27)		
	Total cured of hyphema	15	(55.5%)
	Total lost eyes	11	(40.7%)
	Undetermined	1	(3.8%)

CONCLUSIONS

1. The one etiologic factor we can control is the use of "BB" guns, which should be outlawed in states not already having this legislation.

2. Cases in this series were predominantly males, Negroes and children.

3. Complications in this series are tabulated.

4. Cases should be divided into partial and complete upon first being seen. The former are medical cases and the latter are surgical.

5. Secondary bleeding occurred at an average of 5.7 days after injury—longer than reported in other series.

6. Ninety-nine per cent of partial hyphemas were cured in this group and 55.5 per cent of complete hyphemas were cured.

7. Therapy advocated in all hyphemas is: Absolute bed rest, bilateral patch, sedation, atropine, rutin, vitamin C and dehydration. In addition, keratome incision, with anterior chamber irrigation, is recommended early with complete hyphema.

8. Secondary hemorrhage, which is partial, calls for no change in therapy. That which completely fills the anterior chamber calls for immediate paracentesis and irrigation.

9. Hyphema associated with secondary glaucoma calls for no change in the routine as outlined for complete or partial filling of the anterior chamber.

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SURVEY SHOWS PUBLIC'S OPINION OF DOCTORS

The results of a nationwide survey to show the public's opinion of the medical profession have recently been announced. The study was sponsored by the American Medical Association in order to find out what might be needed to improve doctors' services. It was authorized by the Board of Trustees, in February 1955, and conducted by Ben Gaffin & Associates, Chicago, opinion and market research firm. The interviewing was done by 289 professional surveyors, and the interviewees were selected so that the proportion of people from various age, economic, geographical, and other groups matched the proportion of such people in the total U.S. population.

Among them were 3000 private citizens, 500 practicing physicians, 100 editors, commentators, and columnists, 100 attorneys, 100 registered nurses, 100 registered pharmacists, and 100 nonphysician executive secretaries of state and county medical societies.

The questions were approved by the American Medical Association but were suggested by the survey firm, which said in its report that "it is to be emphasized that the public, individual doctors, and the research agency established the issues."

In view of the steady flow of articles in the daily press, and in magazines, such a survey was most timely. Many of these articles are designed to be antagonistic, or slanted to be critical of physicians and of their conduct of the affairs of American medicine.

It was anticipated that the survey would point the way toward what is needed to improve doctors' services, and possibly, provide material with which to combat our critics. The results have been both reassuring and illuminating. The findings are quite voluminous and can be considered under three headings: (1) the public's views about physicians, (2) the public's views about organized medicine and medical economics, and (3) doctors' views about organized medicine.

When considering the public's views about physicians, it should be realized that America's doctors occupy a unique role in modern life. The relationship of the doctor with people is such as to touch the inmost portions of their physical and emotional structure. He is the one to whom they look to guide them through life's major crises. They unconsciously endow him with attributes he may not possess and come to judge him by standards different from those by which they judge

other human beings. It is a source of some consolation, therefore, that what they appear to criticize is a matter of time and economics, and not our personality or ability.

The survey showed that most Americans have their own family doctor and most of them like him, and like doctors as a group; people's opinions gained from their own experience differ from those based on hearsay or other sources; doctors are more critical of themselves than are other people. When people are critical of physicians it is largely for the cost of the care; they do not, however, think doctors are trying to get rich quick. The public seems to be evenly split for and against the "sliding scales" of fees. About nine out of ten have a high opinion of the family doctor's intelligence, capability, devotion to his profession, and personal interest in patients. Their most unfavorable comment is that he thinks he is always right and is hard to reach for emergency calls.

When it comes to the opinion of doctors generally, 93 per cent of those surveyed say doctors as a group are likeable, but they use different standards in judging doctors other than their own. When they speak of doctors they do not know personally they are critical mostly of fees, coldness, impatience, lack of frankness, unavailability, and incompetence.

Five-sixths of Americans have family doctors and they tend to think of their doctor as someone special. In their reasons for saying he is different, 32 per cent assign personal interest, sympathy, and kindness; 19 per cent competence, intelligence, and education; 17 per cent friendliness, personality, and manner; 9 per cent frankness and honesty. When given a chance to criticize, the leading complaint listed by 13 per cent is "their charges and interest in money." Nine per cent mentioned each of these complaints: "don't take enough time and hurry you too much," "impersonal, cold, independent." and "not frank, speak half-truths, dishonest." Some of those listing dislikes said that their complaints referred only to "some, not most" doctors.

The majority of those interviewed denied most of the frequently voiced complaints about doctors when speaking of their own. For instance, when speaking of their own doctor, 19 per cent said that the doctor was hard to reach for emergency calls; but in speaking of other doctors, 51 per cent said that he was hard to reach. When speaking of doctors keeping people waiting longer than necessary, 15 per cent said it was true of their own doctor, but 41 per cent said it was true of doctors in general. Sixty per cent of the public say that most doctors do not give the patient as much time as the patient would like; while only 18 per cent say this is true of their own doctor.

The survey shows that the majority of the public tries to interpret the ways of medicine accurately, but it can only do this when viewed in the light of experience with the individual's own physician. Physicians themselves can take pride in this indication of the public's appreciation of their efforts to discharge an obligation properly, and that in some degree they have attained a part of the goal set for themselves. However, they can take heed that in the long run the public can accurately assess their shortcomings. The basis for public relations is in the doctor's office.

The survey contains a mass of material which will be a valuable guide to the individual and to organized medicine in the future, and the full report will repay study by every physician.

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ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1956 ANNUAL MEETING

Have you made arrangements to attend the Seventy-sixth Annual Meeting to be held in Alexandria April 23-25? Requests for hotel reservations should be sent to Dr. D. B. Barber, 200 DeSoto Street, Alexandria, promptly. Although accommodations at the Bentley Hotel, headquarters for the meeting, are limited, rooms are now available at the Evangeline Hotel and at several very good motels and tourist courts. It is necessary, however, for requests to be submitted well in advance because rooms, not reserved, will not be held indefinitely for use by members of the Society.

The local Committee on Arrangements has been most active and plans are nearing completion. All technical exhibit space has been sold and from applications received indication is that there will be many interesting scientific exhibits. Members desiring scientific exhibit space should apply through the Secretary-Treasurer's office immediately.

The Chairmen of the various scientific sections have secured many creditable papers from Louisiana doctors, as well as from several out-of-state guests, and the Committee on Scientific Work will schedule presentation of these papers in accordance with wishes of the Executive Committee. There will be sessions on medicine and on surgery held simultaneously on the mornings and afternoons of Tuesday, April 24 and Wednesday, April 25.

A luncheon, with a clinico-pathologic conference, will be scheduled for Tuesday and all members are urged to make plans to attend this session.

Specialty groups wishing to hold luncheons during the time of the Annual Meeting should contact the office of the Secretary-Treasurer so that suitable arrangements can be made through the local Committee on Luncheons. It should be remembered, however, that luncheons for these groups should not conflict with sessions of the State Society and therefore should be planned for Wednesday, April 25, since the luncheon for the House of Delegates will be held on Monday and the membership luncheon on Tuesday.

The social phase of the meeting will include a golf tournament for all members interested and the dinner dance will be scheduled for the last night of the meeting, Wednesday, April 25. This should be remembered when requesting hotel reservations.

It is expected that this will be one of the most interesting, instructive and enjoyable meetings in the history of the State Society and it is hoped that there will be an unprecedented attendance.

OF INTEREST TO ALL MEMBERS

Quite a number of new Representatives and Senators and one definite Chiropractor by the name of John S. Lewis, in the House from Beauregard Parish, will serve in the House and Senate for the coming Session. Our fight will be one in which every member of the State Society should and will be expected to contact his Representative and Senator in his respective Parish or district. Request your Representative not only to vote against any Chiropractic Bill that might be introduced but, also to avoid trading votes with Chiropractor Lewis, thereby obligating themselves to vote for his Legislation, which, in all probability, will be only one Bill and that Bill will be for licensing Chiropractors. Do this immediately. Don't wait until the Legislature is in Session. Delay is dangerous.

Our Legislative Consultant, Mr. Percy J. Landry, Jr. has been quite active in contacting candidates and elected members of the Legislature regarding possible legislation which might affect the welfare of the public, organized medicine and our profession.

You, as members, should, without delay, contact the Legislators advising them that these cultists are practicing medicine illegally. They are not qualified by education or experience and are a distinct danger in any community and the people who patronize these cultists, as you well know, are jeopardizing their own best interests. It is our duty as physicians to inform and educate the public that these cultists are not Doctors of Medicine as a good many of our people think. Let them know that they are imposters.

REPORT OF COMMITTEE CHAIRMAN AMERICAN MEDICAL EDUCATION FOUNDATION

I enclose material which pertains to the recent meeting of State Chairmen of the American Medical Education Foundation which I attended. The program was along the same lines as that of last year, the obvious objective of most of the morning session being to sell the State Chairmen upon the importance of the AMEF and of the National Fund for Medical Education to the future of the medical schools. I did not need to be sold on this point, since the gifts

to our own medical school from the National Fund for Medical Education, which are in the form of unrestricted grants, have been of great help to us, as they have been to all other schools. In the past there had been no unrestricted funds in our budget or, as I gathered at the meeting, in the budgets of other medical schools. All funds were rigidly earmarked for particular purposes so that little flexibility in the teaching or research program was possible. The National Fund grants have enabled us to begin educational and research projects soon after they were conceived, and those which were successful later received support from ordinary University sources.

The last paper on the morning program was devoted to Medical Education Week, which is described in one of the enclosed folders. The purpose of this week, which will be officially proclaimed as such by President Eisenhower, is to acquaint the public with the problems and needs of medical education as well as to raise funds for the AMEF.

During the afternoon discussion some of the State Chairmen criticised AMEF for making plans without consulting the various States, especially in relation to Medical Education Week, and also remarked upon the fact that whereas AMEF had planned Medical Education Week to be chiefly an educational venture, the National Fund seemed to regard it principally as a fund-raising campaign.

It was also brought out that some States have made very substantial contributions to AMEF, whereas contributions from other States were very, very small. It was noted that Louisiana was one of the States in which contributions were extremely small.

In a few States a compulsory assessment or a raise in dues has been made as a means of contribution to the AMEF. There was considerable discussion as to whether the group should recommend to the AMA or to the State Associations that a policy of compulsory assessments be adopted. The body finally voted, with only three dissenting votes, to go on record as favoring compulsory assessments for AMEF. I was one of the three who voted against this motion. On the second motion, the body again voted by a substantial majority that assessments be made at the AMA level. I also voted against this motion. It is my feeling that although the AMEF and the National Fund for Medical Education serve an extremely useful purpose, contributions by physicians to the AMEF or any other campaign should not be compulsory. I do, however, favor an active campaign in this State among physicians to solicit contributions to the AMEF. Last year, although grants from the National Fund to the medical schools in Louisiana exceeded $60,000, the total amount donated by physicians in the State was less than $3,000. I recommend that prior to the meeting of the State Medical Society a meeting of the AMEF Committee be held so that recommendations may be made to the House of Delegates in this regard.

EDGAR HULL, M. D., Chairman

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MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

A CANCER CONFERENCE

A working conference for investigators in the field of leukemia will be held in New Orleans, La., April 10th and 11th, sponsored by the Louisiana Division of the American Cancer Society.

Principals in the conference include Dr. W. R. Arrowsmith of the Ochsner Clinic New Orleans; Dr. G. John Buddingh of Louisiana State University School of medicine; Dr. Joseph H. Burchenal of Sloan-Kettering Institute for Cancer Research; Dr. Walter J. Burdette of the University of Missouri School of Medicine; Dr. Jacob Furth of Children's Cancer Research Foundation; Dr. Alfred Gellhorn of College of Physicians and Surgeons, Columbia University; Dr. Ludwik Gross of the Bronx, New York, VA Hospital; Dr. Arthur Kirschbaum of Baylor University School of Medicine; Dr. Lloyd W. Law of the National Cancer Institute; Dr. Charles C. Sprague of Tulane University School of Medicine; Dr. Jerome T. Syverton of the University of Minnesota; and Dr. Arthur C. Upton of the Oak Ridge National Laboratory.

Each principal in the conference will present a fifteen minute paper on one of three topics, diagnosis, etiology or therapy of leukemia, to be followed by general discussion among the conference participants.

Investigators in this and allied fields are welcome to attend any of the four sessions to be held during the two day conference. Those desiring to attend should communicate with the American Cancer Society, 822 Perdido St., New Orleans La. before April 1st.

FIVE-MINUTE, FOOL-PROOF SPOT TEST FOR GOLD DEVELOPED BY LSU PROFESSOR

A new rapid spot test that identifies the faintest traces of gold in five minutes is the result of a 15-month search by a Louisiana State University professor.

The new spot test is expected to benefit chemical researchers who suspect traces of gold in a compound. The only equipment needed: two test tubes, a medicine dropper, the reagent, acid, and butyl alcohol.

Dr. Philip W. West, Boyd Professor of chemistry at LSU and an international authority on spot test techniques, developed the new method after a 15-month search for a proper reagent, a chemical that detects other substances.

Naphthylamine, used in dye manufacture, is the reagent in Dr. West's process. The new technique may find an application to medicine in testing the blood of patients troubled by arthritis. Small amounts of gold are sometimes used to relieve the sufferings of arthritis victims.

BEER FOUND HELPFUL AND HEART PATIENTS LOVE IT

Beer may no longer be just a fond dream to many sufferers of congestive heart failure, according to a forum article in the current issue of **Diuretic Review,** distributed to the medical profession by Lakeside Laboratories, Inc. of Milwaukee, Wisc.

The article cites recent studies in British and Swiss professional journals which mention twofold advantages of beer in the diet of patients with cardiac failure.

First, and most important, is the well-known diuretic property of beer in relieving liquid congestion common to sufferers.

In one paper cited by **Diuretic Review,** for example, a specific regimen is described by a specialist in Great Britain. Two bottles of beer replaced equivalent volumes of water in a total fluid intake of one-and-one-half liters.

A second advantage was then observed. Beer can safely be added to persons on a salt-free diet. The salt content of the beverage is sufficiently low.

CENSUS OF FOREIGN EXCHANGEES

Almost 40,000 foreign students, scholars and doctors spent the 1954-55 academic year in the United States, according to **Open Doors**, the annual census of foreign exchangees in the United States, recently published by the Institute of International Education, 1 East 67th Street, New York City.

The report gives data on the 34,232 students from abroad who studied in the U. S. this last year, on 635 scholars on the faculties of U. S. educational institutions, and on 5,036 foreign doctors training as interns or residents in U. S. hospitals. This is the first year in which the census has given information on foreign scholars and doctors.

Of the total of 39,903 exchangees, 29 percent came from the Far East; 24 percent from Latin America; 17 percent from Europe; 13 percent from North America; 13 percent from the Near and Middle East; 3 percent from Africa, and 1 percent from Oceania.

COMPREHENSIVE STUDY OF MERCURIAL MEDICATION IN CARDIAC CASES

"Is there accumulation of mercury in the course of treatment with mercurial diuretics?

"Is renal function impaired or damaged?

"How much mercury does accumulate in the kidney and other vital organs after extensive use of mercurial diuretics?"

Organomercurial medication in heart failure has been studied comprehensively over a long period for laboratory evidence of its effect on organs as well as its clinical effectiveness, by William A. Leff, M. D., and Harvey E. Nussbaum, M. D., cardiologists of the Beth Israel Hospital in Newark, N. J.

The battery of tests included urinalysis, urea nitrogen, NPN, creatinine, P.S.P. tests, urea clearance tests, and electrolyte studies. There were three deaths in this series, none of whom died in failure, and autopsy studies were made in these cases.

They have found oral organomercurial diuretic chlormerodrin (Neohydrin-Lakeside Laboratories) clinically effective without evidence of renal toxicity.

Moreover, the pathologic studies have shown no damage to the liver and kidneys, even in patients who received tremendous amounts of mercury.

ASPIRIN PREFERRED IN RHEUMATOID ARTHRITIS

Aspirin is the analgesic of choice in treating rheumatoid arthritis and, combined with rest and physical therapy, still constitutes the basic approach in managing the condition, according to a panel discussion reported in **California Medicine** (82:367, 1955).

The panel consisted of Drs. Ephraim P. Engleman, Howard J. Weinberger, Carlos F. Sacasa, Nathan E. Headley, Roland Davison, Stacy R. Mettier and Frederic W. Rhinelander.

Aspirin not only has proven analgesic activity in rheumatoid arthritis but "has a definite effect on the connective tissues involved in the disease," Dr. Davison stated. Urging liberal use of aspirin, he recommended a dose of 15 grains every four hours during the day.

Various combinations of salicylates and other drugs, notably para-aminobenzoic acid, have failed to demonstrate any greater effectiveness than aspirin, the panel agreed.

NEW MALARIA DRUG ACTS FAST AGAINST VIVAX AND FALCIPARUM

Plaquenil, a new antimalarial compound, resulted in rapid clinical improvement in 213 cases of P. vivax and P. falciparum infections, without any toxic effects, according to Dr. Mark T. Hoekenga of the United Fruit Co. Hospital in La Lima, Honduras.

Writing in the American Journal of Tropical Medicine and Hygiene (4:22, 1955), he says the new antimalarial was given orally and parenterally to Honduran natives ranging in age from seven to 65 years. Developed at the Sterling-Winthrop Research Institute, Plaquenil is presently under clinical study by Winthrop-Stearns Inc.

Dr. Hoekenga reports that parasites disappeared and fevers were brought down to normal in 18 to 48 hours. These results were obtained both in an orally treated group of 150 patients and in the 63 who received Plaquenil intramuscularly or intravenously. Single doses of varying concentrations were used for all 213 cases. Treatment failed in eight cases and only three relapses were noted. The latter were retreated and had no further relapses at the end of one year's observation.

BOOK REVIEWS

The Mechanism of Labour by Erik Rydberg, M. D., Springfield, Illinois, Charles C Thomas, 1954, pp 180, Price $4.75.

This book is a presentation of the author's ideas on the mechanism of labor, many of which are at variance with the views set forth in the textbooks of obstetrics. For example, his concept of flexion of the head is quite different from the usual one, so he has described "positional flexion" and "postural flexion". He differs also as regards the attitude of the fetus in the uterus, and the disposition of the fetal soft parts. He is

of the opinion that the downward propulsion of the child is the result of general intrauterine pressure, and that so-called fetal axis pressure, transmitted through the spinal column to the head, simply does not exist.

The author states that "The present writer concluded, therefore—and this is the essential point of his theory—that the *movements* of the *fetal head during labor are determined essentially by the shape of the head and the shape, elasticity, and plasticity of the wall of the soft birth canal* (Chapter 2). And again *"The author's conclusion is that the shape of the fetal head is the chief factor in determining its movements during labor"*. (Chapter 7, Summary). In supporting these contentions the author marshalls a mass of statistics, x-ray studies, and experiments with models which make quite an impressive presentation. It is a book which can not be read casually; it must be studied, analyzed, and intellectually digested. It is well written and the author's views are well presented and seemingly well substantiated. It is recommended for the thoughtful perusal of everyone in the field of obstetrics.

E. L. KING, M. D.

The Auxiliary Heart; by William Walter Wasson, Springfield, Ill., Charles C Thomas, 1954, pp. 184. Price $10.50.

The author uses the term "auxiliary heart" to include all the factors which aid the heart in propelling the blood through the lungs. He discusses the part played by (1) the alternating changes in pressure associated with the muscular action of the thoracic cage and diaphragm, and the counter action of the elastic tissue of the lung itself; (2) the pressure gradient in the vascular system.

He believes that the lack of any relative increase in the thickness of the right ventricle in post fetal life indicates that the measure of aid given by the "auxiliary heart" is the difference in the amount of blood pumped through the lung by the adult as compared with the fetal type of circulation.

He states that the propulsion of the lymph through the lung is brought about by the same factors which constitute the "auxiliary heart".

The effects of interfering with the functions of the auxiliary heart are described. The secondary changes occurring when anoxia supervenes are briefly touched upon.

More than half of the main part of the book is composed of excellent diagrams and reproductions of illustrative radiographs. The final chapter is a historical sketch of the lesser circulation by Mindell W. Stein, B.S.

The book constitutes a good review of certain aspects of thoracic physiology.

CHARLES ODERR, M. D.

Reactions with Drug Therapy; by Harry L. Alexander, M. D., Philadelphia, Pa., W. B. Saunders Company, 1955, Pp 301, Price $7.50.

After some brief introductory remarks on drug reactions, the author devotes a chapter to the mechanisms of drug hypersensitivity and cross reactions between drugs as well as other chemical compounds. The historical data and explanations are brief but adequate, and the references listed provide ample source material for the student who wishes to pursue further this aspect of drug reactions.

The next two chapters describe the various dermatologic manifestations and systemic patterns which can be produced by drug hypersensitivity. The numerous tables in these chapters provide helpful sources from which one can find the drugs which most frequently induce the various specific reaction patterns.

The remainder of the book deals with individual compounds or groups of compounds as regards the frequency, the description, and something of the treatment of the dermatologic and systemic patterns they induce. Such information is of undoubted practical benefit to anyone who is using drug therapy, but the author attempts in most cases to limit the text to reactions due only to hypersensitivity. This limitation reduces the practical scope of the book because the reader is not warned of such ill effects as cinchonism, the hepatoxic effect of carbon tetrachloride, or the premalignant nature of arsenical hyperkeratoses.

References are abundantly supplied after each chapter in the book.

MARVIN E. CHERNOSKY, M. D.

PUBLICATIONS RECEIVED

Little, Brown and Company, Boston: Ciba Foundation Symposium on Experimental Tuberculosis, Bacillus and Host, with an Addendum of Leprosy.

Charles C Thomas, Publisher, Springfield, Ill.: Joint Ligament Relaxation Treated by Fibro-Osseous Proliferation, by George S. Hackett, M. D.